

2014-1194

**IN THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

VERSATA DEVELOPMENT GROUP, INC.,
Appellant,

v.

SAP AMERICA, INC. and SAP AG,
Appellees,

and

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY
and DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK
OFFICE,
Intervenor.

Appeal from the United States Patent and Trademark Office, Patent Trial and
Appeal Board in No. CBM2012-00001.

**BRIEF OF APPELLANT
VERSATA DEVELOPMENT GROUP, INC.**

Mike McKool, Jr.
Principal Counsel
Daniel L. Geyser
McKOOL SMITH, P.C.
300 Crescent Court, Suite 1500
Dallas, TX 75201
(214) 978-4000

Joel L. Thollander
Steven J. Pollinger
McKOOL SMITH, P.C.
300 W. 6th Street, Suite 1700
Austin, Texas 78701
(512) 692-8700

*Attorneys for Appellant
Versata Development Group, Inc.*

(Additional counsel listed inside cover)

March 17, 2014

Nancy J. Linck
Martin M. Zoltick
ROTHWELL FIGG ERNST &
MANBECK PC
607 14th Street, NW, Suite 800
Washington, DC 20005
(202) 783-6040

*Attorneys for Appellant
Versata Development Group, Inc.*

CERTIFICATE OF INTEREST

Counsel for Versata Development Group, Inc. certifies the following:

1. The full name of every party or amicus represented by me is:

Versata Development Group, Inc.

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

N/A

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

Versata Development Group, Inc. is a wholly owned subsidiary of Versata Enterprises, Inc.; and Versata Enterprises, Inc. is a wholly owned subsidiary of Trilogy, Inc.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

McKool Smith, P.C.: Mike McKool, Jr., Steven J. Pollinger, Joel L. Thollander, Daniel L. Geyser

Rothwell Figg Ernst & Manbeck PC: Nancy J. Linck, Martin M. Zoltick, R. Danny Huntington, Derek Dahlgren, Brian S. Rosenbloom

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TABLE OF ABBREVIATIONS

Parties

Versata	Appellant Versata Development Group, Inc.
SAP	Appellees SAP America, Inc. & SAP AG
PTO	United States Patent and Trademark Office & Intervenor Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office

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Terms

'350 patent	U.S. Patent No. 6,553,350
AIA	Leahy-Smith America Invents Act
APA	Administrative Procedure Act
BRI	Broadest Reasonable Interpretation
CBM	Covered Business Method
PTAB	Patent Trial and Appeal Board

STATEMENT OF RELATED CASES

Pursuant to FED. CIR. R. 47.5, Appellant Versata Development Group, Inc.

notes that:

This appeal is related to another appeal currently pending in this Court—

Versata Dev. Group, Inc. v. Michelle K. Lee, Deputy Director, U.S. Patent and Trademark Office and SAP Am., Inc. and SAP AG, No. 14-1145. The Court has ordered that these appeals shall be treated as companion cases for purposes of assigning the cases to the same merits panel for argument.

This appeal is also related to *Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255 (Fed. Cir. 2013) (Chief Judge Rader, Circuit Judges Prost and Moore), *cert. denied*, No. 13-716, 2014 U.S. LEXIS 715 (Jan. 21, 2014).

I. STATEMENT OF JURISDICTION

Contrary to its determination below, the PTO lacked jurisdiction over SAP's petition for multiple reasons. *See* Part V.B, *infra*. But the PTAB proceeded nonetheless, issuing a final written decision on June 11, 2013, JA45, and then denying rehearing on September 13, 2013, JA83. Versata timely filed its notice of appeal on November 13, 2013, JA92-95. This Court has jurisdiction under 28 U.S.C. § 1295(a)(4)(A) and 35 U.S.C. § 329.

II. STATEMENT OF THE ISSUES

1. Whether the PTAB wrongly exercised jurisdiction under the AIA where:
 - a) claim preclusion foreclosed SAP's petition, as final judgment had already been entered against SAP in district-court litigation;
 - b) Versata's patent does not claim a "covered business method," AIA § 18(d)(1), because it does not involve "financial product[s] or service[s]" and falls within the safe harbor for "technological invention[s]"; and
 - c) Congress did not grant the PTAB power to review CBM patents for subject-matter eligibility under 35 U.S.C. § 101, the sole ground for the PTAB's decision.

Each of these issues is preserved for appeal.

2. Whether, if the PTAB had jurisdiction, it erred in holding the

challenged claims patent ineligible under § 101 where:

- a) the PTAB improperly abstracted the actual claim language in its analysis;
 - b) the challenged claims are not directed to an abstract idea, but to a specific application of computer software—a “hierarchical pricing engine”; and
 - c) the claims are demonstrably non-preemptive and meaningfully limited,
- and the PTAB incorrectly shifted the burden of proof to Versata on this point.

3. Whether, if the PTAB had jurisdiction and correctly analyzed § 101 under the claims *as construed*, the Court should remand for the PTAB to reapply § 101 using a *proper* claim construction where the PTAB:

- a) ignored a prior and conclusive judicial claim construction;
- b) applied the examinational BRI standard in this *adjudicatory* setting; and
- c) misconstrued, even under the BRI, a key claim term.

III. STATEMENT OF THE CASE

A. Preliminary Statement

This appeal arises from the very first CBM review under the AIA. It raises several fundamental issues of first impression, and the Court’s disposition will determine important boundaries for the AIA’s new and increasingly popular post-grant review proceedings.

SAP sought CBM review for one purpose—to collaterally attack a prior Article III judgment. In determining that it had jurisdiction to adjudicate SAP’s

petition, and in ultimately holding the challenged claims to be patent ineligible, the PTAB swept past statutory limits on its jurisdiction, excused SAP from an indisputable case of claim preclusion, and then declared a “breakthrough” software invention patent ineligible under § 101 by first pushing aside multiple, specific, concrete claim limitations to isolate an alleged abstract idea, and then reversing the burden of proof—effectively requiring *Versata* both to prove patentability and disprove unpatentability.

The PTAB’s jurisdictional determinations were overreaching; its merits analysis legally erroneous; and its ultimate conclusion—holding this detailed, commercially successful software patent to be unpatentably “abstract”—incorrect. If the PTAB’s errors are allowed to stand, systemic interests will suffer as litigation expands and lengthens; interbranch conflict will be fostered; repose will become ever more elusive; and the court system will be forced to expend scarce resources adjudicating the same issues multiple times, only to face still more litigation to decide which adjudication should take precedence. The Court should not allow such dangerous—and statutorily unsupported—precedent.

B. The Claimed Invention

The ’350 patent claims a computer software innovation providing improvements in performance and ease of maintenance over then-existing pricing software. JA2898. The claims are not directed to a method of doing business; they

are directed to an improved software pricing engine that stores and processes pricing data in a new way. And the claimed system works—“[t]his hierarchical pricing engine used less data than the prior art systems and offered dramatic improvements in performance.” *Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255, 1258-59 (Fed. Cir. 2013).

Challenged claims 17 and 26-29 are limited to a specific capability for arranging data in specific hierarchies in a computer data source, and then retrieving and processing the data in a particular way. JA2906-07. For example, the claims require retrieving data at multiple levels of both customer and product hierarchies, and then processing these retrieved data to determine a price. This process results in substantial improvements in computer efficiency and ease of maintenance by enabling the use of fewer queries and fewer tables. JA2898-99. The invention permits fewer queries and tables by arranging data hierarchically in customer and product hierarchies (reducing the number of tables) and retrieving data from multiple levels of the hierarchies at once (reducing the number of queries). JA2899(6:40)-900(7:1). The reduction in queries and tables improves computer efficiency, and fewer tables means less data to maintain. JA2900(7:39-44); JA37718; JA37699-705. The claims delineate specific computer software steps that enable these benefits. For example, the steps in claims 17 and 26 include a

specific way of sorting the retrieved information, eliminating some of the retrieved information, and determining a price based on the remaining information:

17. A method for determining a price of a product offered to a purchasing organization comprising:

arranging a hierarchy of organizational groups comprising a plurality of branches such that an organizational group below a higher organizational group in each of the branches is a subset of the higher organizational group;

arranging a hierarchy of product groups comprising a plurality of branches such that a product group below a higher product group in each of the branches is a subset of the higher product group;

storing pricing information in a data source, wherein the pricing information is associated, with (i) a pricing type, (ii) the organizational groups, and (iii) the product groups;

retrieving applicable pricing information corresponding to the product, the purchasing organization, each product group above the product group in each branch of the hierarchy of product groups in which the product is a member, and each organizational group above the purchasing organization in each branch of the hierarchy of organizational groups in which the purchasing organization is a member;

sorting the pricing information according to the pricing types, the product, the purchasing organization, the hierarchy of product groups, and the hierarchy of organizational groups;

eliminating any of the pricing information that is less restrictive; and determining the product price using the sorted pricing information.

26. A computer readable storage media comprising: computer instructions to implement the method of claim 17.

JA2906-07. Claims 27-29 are directed to a subset of these specific software steps enabling the computer performance and maintenance benefits. JA81-82.

The patent repeatedly explains that its claims provide a technological solution to technological problems with data storage, maintenance, and retrieval

associated with prior art pricing systems. JA2898(3:16-23); JA2899(6:1-7,6:40)-900(7:1); JA2900(8:3-36); JA37715-22. The '350 patent thus discloses and claims a software invention for implementation on a computer—a technological innovation that improves computer performance, not a business innovation or abstract idea that happens to be implemented on a computer. JA2899(5:8-9,56-58).

C. Competition with SAP and Prior Litigation

Versata's invention was a "breakthrough" and hailed as "very innovative" by the industry. *Versata*, 717 F.3d at 1259. Versata embodied the new technology in its "Pricer" software. *Id.* Pricer's "praise" was "borne out in its sales" to major companies, "such as IBM, Lucent, Motorola, and Hewlett-Packard." *Id.* Pricer quickly generated hundreds of millions of dollars in revenue and was sold as a "bolt-on" for companies using SAP enterprise software. *See id.*; JA3694; JA3660.

Sensing a competitive threat, SAP set out to uncover Versata's technology and develop its own pricing engine that would work just "like Versata's Pricer." *Versata*, 717 F.3d at 1259. SAP succeeded. When it launched its new pricing engine, "it bundled the hierarchical pricing capability into its full enterprise software to discourage the use of bolt-on products like Pricer." *Id.* This had its intended effect, and while "Versata maintained Pricer as a product offering, [it] made no new sales as SAP's bundled software took hold." *Id.*

In 2007, Versata sued SAP for infringing the '350 patent. JA40015-22. SAP initially responded with a § 101 invalidity defense, JA40274, and developed corresponding expert testimony, JA40279. But later SAP abandoned that defense, along with its anticipation and obviousness defenses under §§ 102-103. JA36201, JA35533-40. Rather than contending that the '350 patent broadly preempted all uses of an abstract idea or recited merely routine steps, SAP strategically argued that the patent was narrow—"directed to a very *specific* way to determine the price of a product using a computer." JA40288. SAP's infringement expert likewise acknowledged many "technical concepts" implicated by the patent. JA35775-76.

The protracted litigation involved two jury trials, and SAP lost each time. On September 9, 2011, the court entered judgment upholding the jury's finding that the '350 patent was not invalid, and that SAP's infringement cost Versata nearly \$400 million in lost profits and damages. *Versata*, 717 F.3d at 1260. The court also entered an injunction, which it stayed pending appellate review.

SAP appealed to this Court and lost again. In May 2013, a unanimous panel (Rader, C.J., Prost and Moore, JJ.) affirmed in full the infringement verdict and damages award and remanded for the district court to modify its injunction. *Id.* at 1257, 1269. After denying rehearing and rehearing en banc, this Court's mandate issued in August 2013, and the Supreme Court denied SAP's petition for a writ of certiorari in January 2014. Versata subsequently abandoned its request for

injunctive relief, thus mooting the only remaining issue on remand and ending the litigation. JA40257-58. Notwithstanding the case’s finality, SAP continues seeking additional relief in district court.

D. SAP’s CBM Petition

1. In September 2012—a year after the district court entered final judgment (and nearly a year into SAP’s appeal)—SAP sought post-grant review under the AIA. It asserted that Versata’s ’350 patent captured a “covered business method” and that claims 17 and 26-29 were invalid under § 101.¹ JA2000-77.

Versata opposed on multiple grounds. It explained that the ’350 patent is ineligible for CBM review because it does not involve the “practice, administration, or management of a financial product or service”—and it *is* for a “technological invention.” JA2207-42. SAP’s petition thus failed the AIA’s threshold requirement. AIA § 18(a)(1)(E). Moreover, SAP’s § 101 challenge exceeded the PTAB’s statutory authority, as Congress textually excluded § 101 issues from the scope of post-grant review. As Versata explained, a CBM petitioner could only raise specific grounds of invalidity, 35 U.S.C. § 321(b), including those “specified” as “condition[s] for patentability,” 35 U.S.C. § 282(b)(2), and § 101 is *not* “specified” as a “condition for patentability” under

¹ SAP initially included challenges under §§ 102 and 112. JA2000-77. After the PTAB instituted review (and denied SAP’s § 112 challenge), SAP dropped its § 102 challenge in order to expedite proceedings under § 101. JA78.

the statute. JA2265-77. Versata further asserted that SAP was estopped by claim preclusion: SAP could not collaterally attack a final judgment issued a year earlier. JA2258-65. Finally, Versata demonstrated that the specific, technical, computer-based claims of the '350 patent—embodied in its “breakthrough” software—recite non-abstract, patent-eligible subject matter. JA2207-28; JA2277. There was thus additionally no basis on the merits to initiate review of a defense that SAP did not consider worth preserving during parallel litigation.

2. In January 2013, the PTAB nevertheless instituted review. JA2. It held that the threshold “CBM” requirement was satisfied, invoking a “broad[]” definition of “financial product or service” as anything “financial in nature, incidental to a financial activity[,] or complementary to a financial activity.” JA21-22. It found that Versata’s patent met that definition because it involved *commercial* activity—“determining a price”—and thus was “complementary to a financial activity and relate[d] to monetary matters.” JA23. The PTAB did not explain how that “broad” standard would exclude *any* commercial activity.

The PTAB also rejected Versata’s contention that the '350 patent was a “technological invention”: according to the PTAB, Versata’s “breakthrough” functionality—although tethered to a computer and requiring technical implementation—“could be performed … with pencil and paper” and did not require any “unconventional” software or equipment. JA27-28.

The PTAB further held that CBM review encompassed challenges under § 101. JA32-36. But it did not attempt to square that conclusion with the statutory text. Instead, the PTAB highlighted past cases describing § 101 as a “condition for patentability,” and recited isolated statements from the legislative record (not the enacted bill) suggesting that § 101 would fall within the AIA’s sweep. JA32-33.

Next, the PTAB “disagree[d]” with Versata’s contention that “SAP should be precluded from pursuing its challenge under the principles of issue and claim preclusion.” JA18. While the PTAB appeared to recognize that claim preclusion is satisfied with “a final judgment on the merits”—such as the earlier judgment entered against SAP—it held that “the decision needs to be immune, as a practical matter, to reversal or amendment.” JA19. The PTAB cited for authority to *Vardon Golf Co., Inc. v. Karsten Mfg. Corp.*, 294 F.3d 1330 (Fed. Cir. 2002), a case involving a *partial* summary judgment that “was not sufficiently final to be appealed”—and was subject to “reversal or amendment” for that reason. *Id.* at 1333. Unlike *Vardon*, the judgment “in the related *Versata v. SAP* litigation” was final. Yet because an appeal was pending, the PTAB “h[eld] that the district court’s judgment [was] not sufficiently firm to be accorded conclusive effect.” JA19.

Finally, the PTAB declared SAP’s substantive § 101 argument sufficiently substantial to proceed. Without accounting for the detailed claim language, the

PTAB concluded that the claims are broadly directed to “an unpatentable abstract idea” of “arranging customer and product data into hierarchies.” JA30.

3. Having instituted review, the trial proceeded on SAP’s substantive § 101 arguments. Both sides offered expert declarations and deposition cuts, but there was no live testimony. SAP offered Dr. Michael Siegel—an SAP-funded university researcher—as an expert. JA37482; JA37595. Siegel’s only attempt to grapple with the significance of the claim limitations in his declaration was the conclusory sentence, “[n]othing in claims 17, 26, 27, 28, and 29 adds anything but conventional, well-known activities” to the abstract ideas he identified. JA3264. He later admitted in deposition that the claims do not preempt any abstract idea. JA37564-66. (This may explain why SAP’s counsel insisted at the oral hearing that the PTAB “doesn’t need the expert testimony at all.” JA1312.) Versata’s expert, Mr. Matthias Liebich, was an industry enterprise software professional. JA34821. After examining the claims as a whole, including the claim limitations in detail, Liebich opined that the claims required a programmed computer, were pointless in any other context, were not routine, conventional, or well-known at the time of the invention, and were not directed to any abstract idea. JA37696-749.

Five months after instituting review, the PTAB issued its written decision holding the claims abstract and thus invalid under § 101. JA45-82. But the PTAB reached this conclusion without accounting for the preemption-avoiding

significance of the claims' full requirements. JA72-77. Furthermore, in construing the claims, the PTAB refused to conform to the court's prior rulings in the Article III proceeding. Specifically, the PTAB ignored the *stare decisis* effect of the court's unchallenged construction, JA62; imported the *examinational* "broadest reasonable interpretation" standard into an *adjudicatory* CBM review, JA53-58; and ignored the parties' joint construction for "pricing information," which also tracked the court's construction—thereby adopting a *broader* reading than either the parties or the court found appropriate, JA63-67.

The PTAB subsequently denied Versata's motion for rehearing, JA83-91, and this appeal followed.

IV. SUMMARY OF ARGUMENT

1. *Jurisdiction.* The PTAB lacked jurisdiction to adjudicate SAP's petition for three independent reasons, each of which is preserved for review.

First, SAP was estopped by claim preclusion. While finding that a CBM petition is subject to "preclusion," JA19; 37 C.F.R. § 42.302, the PTAB held that SAP was not estopped because the district court's final judgment was still pending on appeal. JA19-20. Yet it is hornbook law that preclusion attaches once a case reaches finality at the *district* level; an appeal's pendency is irrelevant. This prevents abusive, duplicative litigation, advances the AIA's core objectives, and protects Article III interests by avoiding unnecessary conflicts with agency

proceedings. Under any traditional analysis, SAP was precluded from initiating CBM review a full year *after* it already lost in district court.

Second, the '350 patent does not qualify as a “covered business method.” It has no connection to any “financial product or service” and is decidedly “technological.” AIA § 18(d)(1). Yet the PTAB still deemed the claims (which relate to product pricing software) to fall under the statute. Even though it had nothing to do with the financial industry, Versata’s invention (according to the PTAB) was “complementary to a financial activity” and “relat[ed] to monetary matters”—as is virtually everything else involved in *any* commercial activity. Congress chose the distinctive term “financial” for a reason; it restricts the PTAB’s purview to patents concerning *financial* products, not *all* products. The PTAB was wrong to read that requirement out of the statute. JA21-23. Moreover, the PTAB erred in declaring that a “breakthrough” software invention—using a “hierarchical pricing engine” to overcome computerized inefficiencies—is not “technological.”

Third, SAP’s § 101 challenge falls outside the scope of CBM review. The statute, as relevant, limits challenges to “any ground specified in part II as a condition for patentability.” 35 U.S.C. § 282(b)(2). And Title 35’s “part II” specifies only two sections as providing “conditions for patentability”—§§ 102 and 103, *not* § 101. Rather than applying the controlling statutory text, the PTAB based its contrary conclusion on cases addressing other issues and snippets of legislative

history. JA32-36. These sources cannot override the statute's plain terms.

2. *Merits.* The lack of jurisdiction is dispositive, but the PTAB also erred on the merits. The challenged claims are not abstract, but involve a practical software application—a “hierarchical pricing engine.” *Versata*, 717 F.3d at 1259. As SAP argued previously, the claims describe a “very *specific* way to determine a price of a product using a computer.” JA35570. The PTAB’s contrary conclusion—holding that a breakthrough computer invention captured solely an abstract idea—rests on three fundamental errors, each of which requires reversal of the decision.

First, the PTAB improperly discounted the actual claim limitations. Nowhere in its analysis does the PTAB apply the full claim language. JA72-77. Instead, the PTAB applied § 101 to its own artificial abstraction of the invention’s alleged “core”—“determining a price using organizational and product group hierarchies.” JA72. The PTAB thus disregarded the claims’ concrete elements. That was error: at an artificial level of generality, it is *always* possible to isolate an abstract idea in any claim, which is why claims are examined in their entirety.

Second, the PTAB identified the claims’ inextricable tie to a machine and their lack of practical application outside a computer. Yet the PTAB declared that this connection indicated *abstraction*, not patent-eligibility, JA73—despite case law holding the opposite. The PTAB further minimized the machine’s central role because the claimed software could run on “general purpose computer hardware.”

JA74. But case law holds that, once installed, specific software transforms general-purpose hardware into a special-purpose machine. Indeed, that is precisely why SAP’s customers—who had already bought SAP’s pricing software—paid millions more to add Pricer as a bolt-on to their enterprise computer systems. *Versata*, 717 F.3d at 1259. This “breakthrough” software patent, with substantial market impact, *id.*, is not a mere abstraction.

Third, the PTAB neglected the claims’ dispositive lack of preemption. JA73-77. Given their specific, concrete limitations, there can be no substantial dispute that these claims do not preempt any abstract idea. One can readily “determin[e] a price using organizational and group hierarchies” without practicing the claimed steps—which include particular kinds of storing, retrieving, sorting, eliminating, and determining. JA72; JA37022-23; JA37564-65. Yet in concluding that the claims’ elements failed to include *meaningful* limits beyond an alleged abstract idea, the PTAB improperly shifted the burden of proof to Versata. JA76 (“Versata ... fail[s] to establish that the [claim steps] provide meaningful limitations”). It was not Versata’s responsibility to prove the meaningfulness of the limitations, *id.*; it was SAP’s burden to *disprove* it, 35 U.S.C. § 326(e). When Versata objected that SAP failed this burden, the PTAB shifted the burden again, faulting Versata for failing “to demonstrate that [SAP’s expert] believed the additional steps to be anything other than conventional.” JA76. The PTAB thus effectively required

Versata to prove validity and disprove invalidity. That was twice error.

3. *Claim Construction.* While the claims satisfy § 101 under the PTAB’s construction, that construction was wrong. First, the PTAB improperly ignored the district court’s prior construction, which should have applied. Second, the PTAB incorrectly employed the examinational BRI standard, which is inappropriate for CBM review and unauthorized by the PTAB’s procedural rulemaking. Third, even under BRI, the PTAB misconstrued the term “pricing information.” Therefore, if the Court concludes that the claims do not satisfy § 101 as construed, it should nonetheless remand with instructions to reapply § 101 using a *correct* construction.

V. ARGUMENT

A. Standard of Review

Every issue on appeal is subject to *de novo* review. The jurisdictional issues regarding estoppel and statutory construction are reviewed *de novo*. *Bowers Inv. Co. v. United States*, 695 F.3d 1380, 1384 (Fed. Cir. 2012) (claim preclusion); *City of Arlington v. FCC*, 133 S. Ct. 1863, 1868 (2013) (“the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress”). Patent eligibility under § 101 is likewise reviewed *de novo*. *In re Comiskey*, 554 F.3d 967, 975 (Fed. Cir. 2009) (§ 101 determinations are “question[s] of law...review[ed] without deference”); JA1312-13; JA1322; JA40311. Claim construction is also reviewed *de novo*. *Lighting Ballast Control LLC v. Philips*

Elecs. N. Am. Corp., No. 12-1014, 2014 U.S. App. LEXIS 3176, at *7 (Fed. Cir. Feb. 21, 2014) (en banc); *In re Pacer Tech.*, 338 F.3d 1348, 1349 (Fed. Cir. 2003) (“[t]his court reviews the Board’s legal conclusions *de novo*”).

B. The PTAB Lacked Authority to Adjudicate This CBM Petition.

This CBM proceeding was jurisdictionally defective for three reasons: (1) having already lost in district court, SAP lacked standing to seek another round before the PTAB; (2) the ’350 patent does not qualify as a “covered business method” patent; and (3) the PTAB is powerless to entertain § 101 challenges under the AIA’s limited vehicle for post-grant review. Each reason warrants reversal.

1. SAP was estopped by claim preclusion.

SAP’s petition was foreclosed by claim preclusion, and the PTAB’s contrary holding conflicts with settled law. The PTAB misread the only authority it cited to support its novel position. And its refusal to credit an Article III judgment wrongly invites duplicative proceedings, frustrates the AIA’s core objectives, and fosters interbranch conflict. Had the PTAB simply followed traditional claim preclusion principles, there would be no conflict between an Article III judgment and an Article I ruling (in the posture most offensive to Article III values—an agency proceeding initiated *after* final judgment). Longstanding preclusion rules require reversal of the PTAB’s decision.

a. There is no dispute that CBM review under the AIA is subject to claim preclusion: “[a] petitioner may not file a petition to institute a covered business method patent review of the patent where the petitioner...is estopped from challenging the claims on the grounds identified in the petition.” 37 C.F.R. § 42.302(b); JA19 (“estoppel may arise from claim preclusion”).

SAP is plainly estopped here. SAP sought CBM review a full year after it lost in district court. JA2073-75. Under settled rules of claim preclusion, that final judgment “precludes the parties or their privies from relitigating issues that were or could have been raised in that action.” *Federated Dep’t Stores v. Moitie*, 452 U.S. 394, 398 (1981). SAP had a “full and fair opportunity to litigate its matter,” *Bowers*, 695 F.3d at 1384; if SAP was dissatisfied with the judgment, its proper recourse was to raise any challenges on appeal, not to refile in search of better luck before a new tribunal. See, e.g., *Nasalok Coating Corp. v. Nylok Corp.*, 522 F.3d 1320, 1329-30 (Fed. Cir. 2008) (applying “the rules of defendant preclusion” to bar a collateral administrative attack); RESTATEMENT (2D) JUDGMENTS § 22(2) (precluding a second action “after the rendition of judgment” if “successful prosecution of the second action would nullify the initial judgment or would impair rights established in the initial action”). Once the district court entered judgment, claim preclusion “operate[d] to bar subsequent assertion of the same transactional

facts in the form of a different cause of action or theory of relief.” *Young Eng’rs, Inc. v. U.S. Int’l Trade Comm’n*, 721 F.2d 1305, 1314 (Fed. Cir. 1983).

b. Notwithstanding this settled doctrine, the PTAB refused to accord the prior judgment preclusive effect. It agreed that claim preclusion applies in CBM proceedings, but adopted the novel position that only *affirmed* judgments are eligible for estoppel. JA19. Because the “final judgment in the related *Versata v. SAP* litigation [was] currently on appeal to the Federal Circuit,” it was “still subject to reversal or amendment” and thus was “[in]sufficiently firm to be accorded conclusive effect.” JA19-20. Indeed, even *after* the judgment was affirmed by this Court and the mandate issued, the PTAB still refused to give proper effect to the judgment. JA37989-91; JA41645-50.

This novel rationale is irreconcilable with controlling precedent. “[T]he law is well settled that the pendency of an appeal has no [e]ffect on the finality or binding effect of a trial court’s holding.” *SSIH Equip. S.A. v. U.S. Int’l Trade Comm’n*, 718 F.2d 365, 370 (Fed. Cir. 1983). This is hornbook law: the “act of taking an appeal is no more effective to defeat preclusion than a failure to appeal.” 18A C. Wright, et al., FEDERAL PRACTICE AND PROCEDURE § 4433 (2002). The Supreme Court established that rule by 1903, and the “lower courts have taken [it]

as settled ever since.” *Id.*² Any other approach would undermine the doctrine—“[a]ll of the values served by *res judicata* are threatened or destroyed by the burdens of retrial, the potential for inconsistent results, and the occasionally bizarre problems of achieving repose and finality that may arise.” *Id.* Rather than avoid these concerns, the PTAB’s error directly brought each to fruition.

The PTAB sharply departed from this settled precedent. It offered no reason for discarding controlling precedent from this Court and the Supreme Court, or tolerating the serious problems its novel theory would invite. Instead, the PTAB staked its position on a single case—*Vardon Golf Co., Inc. v. Karsten Mfg. Corp.*, 294 F.3d 1330 (Fed. Cir. 2002)—which the PTAB *misread*. JA19.

According to the PTAB, *Vardon* stands for the proposition that a decision is not “final”—and thus not preclusive—until it is “immune, as a practical matter, to reversal or amendment.” JA19. But *Vardon* contemplated “reversal or amendment” at the *trial* level, not on appeal. It found that a “partial summary judgment was not final” because it was interlocutory and *not yet subject to appeal*. 294 F.3d at 1333-34. Because neither party sought to “certify” the ruling as final, it was ““subject to

² See *Deposit Bank v. Frankfort*, 191 U.S. 499, 511 (1903) (reversing a judgment on appeal did not make it “any the less effective as an estoppel between the parties while in force”); see also, e.g., *Huron Holding Corp. v. Lincoln Mine Operating Co.*, 312 U.S. 183, 189 (1941) (“appeal [of a judgment] does not...detract from its decisiveness and finality”); *Roche Palo Alto LLC v. Apotex, Inc.*, 526 F. Supp. 2d 985, 998 (N.D. Cal. 2007) (“The preclusive effect of a federal district court judgment is unaffected by any appeals pending therefrom.”).

revision at any time before the entry of judgment adjudicating all the claims.”” *Id.* at 1334. Here, by contrast, there *was* a final judgment adjudicating all the claims. JA2073; JA37763. It was *that* finality—the conclusion of the case in district court, rendering it “subject to appeal”—that was missing in *Vardon*. *Id.* at 1334; RESTATEMENT (2D) JUDGMENTS § 13 cmt. g.

Vardon thus did not hold that a final judgment escapes estoppel until appeals are concluded. It simply found that a decision that was not yet final in district court was not yet subject to collateral estoppel. That holding does not unwind over a century of law refusing to permit losing parties to relitigate the same case in a new tribunal while the first judgment is on appeal. *SSIH Equip.*, 718 F.2d at 370.

c. The PTAB’s holding wrongly diminishes Article III judgments and invites the unacceptable costs that claim preclusion and the AIA are designed to avoid. “[T]he evils of vexatious litigation and waste of resources are no less serious because the second proceeding is before an administrative tribunal.” *Young Eng’rs*, 721 F.2d at 1315; *Nasalok*, 522 F.3d at 1329-30. Yet SAP admits that its CBM petition is a duplicative, collateral attack on a preexisting final judgment. JA40004-05. It seeks to relitigate questions that it strategically waived during seven years of litigation. The PTAB had no basis for brushing aside the burdens of redundant proceedings, the risks of inconsistent results, and the stark costs to finality and

repose—all felt by the judiciary (whose judgment was ignored) and the parties (who were forced to start over *after* entry of final judgment).

An administrative proceeding is not a backdoor for disappointed litigants to upset the results of full and fair Article III proceedings. *Contra JA20* (finding it favorable that agency review might have an “effect on the related litigation”). Yet the PTAB’s refusal to acknowledge a legitimate final judgment has left Article I on a collision course with Article III. *Cf. Fresenius USA, Inc. v. Baxter Int’l, Inc.*, 721 F.3d 1330 (Fed. Cir. 2013). While some conflict is at times unavoidable, there is little reason to set aside established law to gratuitously *invite* it. When properly applied, claim preclusion safeguards these systemic interests.

Even aside from preclusion, the PTAB’s theory stands the AIA’s “fundamental purpose” on its head. Congress crafted the AIA “to provide a cost-effective *alternative* to litigation.” 157 CONG. REC. S1363-64 (daily ed. Mar. 8, 2011) (statement of Sen. Schumer) (emphasis added); *see also id.* (CBM review is to “be used instead of, rather than in addition to, civil litigation”). Congress authorized a limited vehicle for resolving patent issues swiftly. After a suit has proceeded to judgment, CBM review no longer serves its purpose. Congress never hinted that the AIA authorized litigants regretting strategic decisions to seek a second chance before the PTAB. But the agency’s failure to abide by controlling

preclusion doctrine has embraced the very expense and delay—duplicating, not *avoiding*, litigation—that Congress enacted the AIA to eliminate.

Claim preclusion barred this proceeding, and the PTAB erred in entertaining SAP’s petition.

2. Versata’s ’350 patent does not capture a “covered business method.”

The PTAB “may institute a transitional proceeding only for a patent that is a “covered business method patent”: one “claim[ing] a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA §§ 18(a)(1)(E), 18(d)(1). The PTAB’s analysis flunks each part of this definition, and it thus lacked authority to adjudicate SAP’s petition.

a. The PTAB eviscerated the “financial product or service” requirement.

Under AIA § 18, Congress authorized the PTAB to reexamine the validity of certain patents affecting the financial industry. In drafting that provision, Congress was careful to limit the PTAB’s new power to “covered business method” patents—patents “performing data processing or other operations used in the practice, administration, or management of a *financial product or service*.” AIA §§ 18(a)(1)(E), (d)(1) (emphasis added). This critical phrase cabined the PTAB’s

jurisdiction, and avoided expanding the AIA’s transitional program to sweep in far too many patents.

In its decision below, however, the PTAB brushed aside this statutory limit. According to the PTAB, the phrase “covered business method” should be “broadly interpreted” to encompass anything “financial in nature, incidental to a financial activity[,] or complementary to a financial activity.” JA21-22. Because the term “financial” (according to the PTAB) means “relat[ed] to monetary matters,” the PTAB effectively captured *all* commercial transactions. JA23. Every activity in today’s economy *relates to money*. The PTAB thus understood activities involving “*a financial product or service*” to mean activities involving “*any* product or service,” including the ’350 patent’s ““pricing of products,’” *Versata*, 717 F.3d at 1258. JA23.

For multiple reasons, the PTAB is wrong.

1. The PTAB’s decision cannot be squared with the AIA’s plain text. Congress used the phrase “financial product or service” for a reason, and its plainest interpretation limits the PTAB’s jurisdiction to products or services from the financial sector—things involving banks, brokerages, holding companies, insurance firms, and their industry-specific products and services (*i.e.*, activities involving finance as the *focus*, not merely activities that happen to involve a commercial transaction). By saying that a CBM covers effectively anything to do

with *money*—as does the sale of any good or service, including milk at a corner market—the PTAB effectively read the term “financial” out of the statute.

In addition, the PTAB never said where it draws the line between “financial” activity and *any* commercial activity, and it offered no principled basis for separating activity “relate[d] to monetary matters” from *everything* in any commercial transaction or enterprise. JA21-23. Is an ordinary sale of any product now “financial activity”—and if not, why not? Any internal process that supports commercial activity—including production, marketing, transportation, etc.—is “incidental” and “complementary” to that activity. The PTAB has done nothing to show where its definition would start or stop, or how it would leave the important qualifier—“financial”—with any meaning at all. If Congress wished to capture anything incidental to *commerce*, it would have said so.

Congress imposed a textual limit for a reason. All the PTAB had to do was read “financial products or services” to mean what it says—or to borrow from the use of the same language in other legislation (*e.g.*, the Dodd-Frank Wall Street Reform and Consumer Protection Act) or its interpretation by the FTC. *See, e.g.*, 12 U.S.C. §§ 5481(15)(A), 5537(a)(2); 16 C.F.R. § 313.3(l); JA22. Any of those constructions would have been consistent with the text, predictable for regulated parties, and easy to administer. Instead, the PTAB interpreted the scope of the AIA to grant itself more power than Congress saw fit to provide.

2. In rejecting this interpretation, the PTAB relied exclusively on “legislative history.” JA21-24. It invoked the views of a single legislator—Senator Schumer—as definitively expressing legislative intent. *Id.* Yet Congress speaks through the statutes it enacts. “[T]he views of a single legislator, even a bill’s sponsor, are not controlling.” *Mims v. Arrow Fin. Servs., LLC*, 132 S. Ct. 740, 752 (2012). The “authoritative statement is the statutory text,” and some of Senator Schumer’s views appear to be incompatible with that text.

The PTAB’s misreading is also inconsistent with other statements in the congressional record. Senator Leahy confirmed that, while the term did not merely affect banks, it was still limited to the “broader industry” such as “insurance, brokerages, mutual funds, annuities, and an array of financial companies outside of traditional banking”—all things that are traditionally understood as truly *financial*. 157 CONG. REC. S5441 (daily ed. Sept. 8, 2011). Representative Shuster also understood the phrase according to its plain text: “the definition … target[s] only those business method patents that are unique to the financial services industry in the sense that they are patents which only a financial services provider would use to furnish a financial product or service,” such as “a patent relating to electronic check scanning.” 157 CONG. REC. H4497 (daily ed. June 23, 2011). And Senator Kyl explained how the AIA was intentionally “limited” to patents “relat[ing] to a financial product or service” at the “request” of “*other industry groups*,” thus

restricting the PTAB’s jurisdiction to patents concerning “products or services that are particular to or characteristic of *financial institutions.*” 157 CONG. REC. S1379 (daily ed. Mar. 8, 2011) (emphases added).

While others, such as Senator Schumer, favored a different, sweeping definition—“[a]ny business that sells or purchases goods or services” (157 Cong. Rec. S5432 (daily ed. Sept. 8, 2011))—that bears no relation to the enacted bill. Legislators cannot achieve through floor statements what “they were unable to achieve through the statutory text.” *Exxon Mobil Corp. v. Allapattah Servs., Inc.*, 545 U.S. 546, 568 (2005). The PTAB erred in elevating select legislative statements above the language adopted by Congress and signed by the President.³

Under a proper interpretation, the ’350 patent is unrelated to any “financial product or service,” and the PTAB thus lacked jurisdiction over SAP’s petition.

b. The PTAB misapplied the “technological invention” exemption.

Even if the ’350 patent involved a “financial product or service,” it falls squarely within the AIA’s safe harbor for “technological inventions.” §18(d)(1).

³ Citing its own rulemaking as authority, the PTAB proclaimed that the AIA’s jurisdictional grant should be “broadly interpreted.” JA21. There is no such charge in the text, and the PTAB overlooked legislative history pointing in the opposite direction. *See* 157 CONG. REC. S5433 (daily ed. Sept. 8, 2011) (statement of Sen. Kirk) (“I vote for this legislation with the understanding that Section 18...is not too broadly interpreted”); *id.* (statement of Sen. Durbin) (“I cast this vote after receiving assurances from my colleagues that the scope and application of section 18 would be appropriately constrained....”).

According to the PTO's regulations, a patent is for a "technological invention" where "the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art," and "solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). The '350 patent satisfies this definition, and SAP failed to carry its burden of proving otherwise. JA24 (acknowledging that the burden rests with SAP).

Versata's patent covers a "hierarchical pricing engine." *Versata*, 717 F.3d at 1259. It confronted and resolved past technological problems resulting from "accessing and applying large amounts of data stored in a large central database." *Id.* at 1258. With "pricing tables" containing possibly billions of entries, "the mainframe would perform the pricing calculation by separately accessing each applicable data set"—which "was highly inefficient." *Id.* The '350 patent instead leveraged "hierarchical product and data structures to organize pricing information," thus achieving full functionality with even a single access. *Id.* This technical solution "used less data than the prior art systems and offered dramatic improvements in performance." *Id.* at 1258-59; JA2208-28; JA2881-908; *see also Versata*, 717 F.3d at 1265 (highlighting "'customer need[]'" for Versata's "patented functionality").⁴

⁴ These findings undergird the panel's damages holding and are binding in this proceeding. *Nat'l Org. of Veterans' Advocates, Inc. v. Sec'y of Veterans Affairs*, 260 F.3d 1365, 1373 (Fed. Cir. 2001).

In addition, in resolving these computerized inefficiencies, Versata's invention was "praise[d] as a 'breakthrough'" and "'very innovative'" (*Versata*, 717 F.3d at 1259)—exactly the kind of objective indicia that traditionally prove "novel[ty] and unobvious[ness]" (37 C.F.R. § 42.301(b)). *See, e.g., Crocs, Inc. v. ITC*, 598 F.3d 1294, 1310-11 (Fed. Cir. 2010). Contrary to the PTAB's contention, it was "not the understanding of Congress" that such a "develop[ed] and commercializ[ed]" patent "would be reviewed and invalidated under Section 18." 157 CONG. REC. S5428 (daily ed. Sept. 8, 2011) (statement of Sen. Schumer).

As the facts established, Versata claimed "an actual software invention" constituting a "technological invention," falling directly within the AIA's safe harbor. 157 CONG. REC. S5431 (daily ed. Sept. 8, 2011) (statement of Sen. Kyl). The '350 patent thus was not subject to CBM review, AIA § 18(a)(1)(E), (d)(1), and the PTAB erred in holding otherwise, JA24-28.

3. SAP's § 101 challenge falls outside the scope of authorized CBM review.

Contrary to the PTAB's contention (JA32-36), Congress did not authorize § 101 challenges in CBM proceedings. The PTAB thus lacked jurisdiction over the single ground it reviewed, and its decision should be reversed.

- a. Under the AIA, Congress restricted the scope of CBM review to "ground[s] that could be raised under paragraph (2) or (3) of section 282(b) (relating to invalidity of the patent or any claim)," 35 U.S.C. § 321(b). *See* AIA

§ 18(a)(1) (CBM review “shall be regarded as, and shall employ the standards and procedures of, a post-grant review under chapter 32”). Section 282(b)(3) authorizes defenses under §§ 112 and 251, which are irrelevant here. Section 282(b)(2), in turn, authorizes defenses “on any ground *specified* in part II *as a condition for patentability*” (emphases added). But “specified” is a distinctive term, meaning to name or mention *explicitly*. “[P]art II” only “specified” two grounds, explicitly, as “conditions for patentability”: (i) § 102—“Conditions for patentability; novelty”; and (ii) § 103—“Conditions for patentability; non-obvious subject matter.” Section 101, by contrast, “specifies” the eligible categories of “[i]nventions patentable,” *not* “conditions of patentability.” It only uses the term “conditions” in referencing *other* “conditions and requirements of this title” (35 U.S.C. § 101)—such as those found in §§ 102 and 103. *See, e.g., Diamond v. Diehr*, 450 U.S. 175, 189 (1981) (recognizing this dichotomy).

The plain text thus unambiguously excludes § 101 from the scope of CBM review. While statutory headings are not always dispositive, Congress conspicuously included a term—“specify”—that focuses on *labels*, not just content. The fact that Congress, textually, designated two sections in “part II” as “conditions for patentability” confirms that this particular language was not accidental. Because § 101 is not “specified” in the same manner, it falls outside § 321(b) and is ineligible for CBM review.

b. In confronting this controlling text, the PTAB said—nothing. It refused to grapple with actual terms of the statute. Instead, the PTAB rested its holding exclusively on isolated language from a handful of decisions (none of which address this issue) and snippets of legislative history. JA32-36. These sources cannot override the statute’s express terms, *Teva Pharms. USA, Inc. v. Pfizer Inc.*, 395 F.3d 1324, 1338 (Fed. Cir. 2005), and they are unavailing in any event.

First, according to the PTAB, multiple cases have “recognized that § 101 is a condition for patentability.” JA33. Yet the PTAB overlooks that the case law is at best mixed, and *none* of SAP’s cases address the truly essential point—that § 101 is not explicitly *specified* in part II as a “condition for patentability.”

The PTAB’s theory is incompatible with cases specifically distinguishing § 101 from the true “conditions for patentability” in “part II.” In *Diehr*, for example, the Supreme Court contrasted § 101—and its “general statement of the type of subject matter that is eligible for patent protection”—with the “[s]pecific conditions for patentability” in subsequent sections. 450 U.S. at 189; *see also id.* at 191 (explaining that the statute had previously been “split into two sections, section 101 relating to subject matter for which patents may be obtained, and section 102 defining statutory novelty and stating other conditions for patentability”); *In re Bergy*, 596 F.2d 952, 959 (C.C.P.A. 1979) (Rich, J.) (same). This Court has also reaffirmed that Congress “denominated” only “two sections of

part II ... as ‘conditions of patentability’—§§ 102 and 103. *MySpace, Inc. v. Graphon Corp.*, 672 F.3d 1250, 1259-60 (Fed. Cir. 2012); *see also Classen Immunotherapies, Inc. v. Biogen Idec*, 659 F.3d 1057, 1064-65 (Fed. Cir. 2011); *Nickola v. Peterson*, 580 F.2d 898, 906 (6th Cir. 1978) (“Section 101 does not specify the conditions for patentability.”).⁵

The PTAB cannot simply brush aside these cases by saying that § 101 is still a “co[a]rse threshold filter” or an “invalidity defense.” JA35-36. The point is that the cases describe § 101 exactly as the statute describes § 101—as something *not* explicitly “specified” as a “condition for patentability.”

Moreover, while the PTAB is correct that certain cases have suggested § 101 is a “condition of patentability” (JA33), those cases did not find that § 101 is *specified* that way *in part II*. In *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1 (1966), for example, the Court stated that “[t]he Act sets out the conditions of patentability in three sections,” including § 101. 383 U.S. at 12. The Court,

⁵ Opinions commanding a majority of the en banc Court in *CLS Bank* further support this conclusion. *CLS Bank Int'l v. Alice Corp. Pty*, 717 F.3d 1269, 1276 (Fed. Cir. 2013) (Lourie, J., joined by Dyk, Prost, Reyna, and Wallach, JJ., concurring) (“It is also important to recognize that § 101, while far-reaching, only addresses patent *eligibility*, not overall *patentability*.); *id.* at 1303 (Rader, C.J., joined by Linn, Moore, and O’Malley, JJ., concurring) (“The Supreme Court repeatedly has cautioned against conflating the analysis of the conditions of patentability in the Patent Act with inquiries into patent eligibility.”).

however, did *not* say that the *statute* specified § 101 as a condition of patentability, which is the question presented here.⁶

The PTAB's best authority from this Court *undermines* its position. In *DealerTrack, Inc. v. Huber*, 674 F.3d 1315 (Fed. Cir. 2012), the Court stated that § 282's defenses "include not only the 'conditions of patentability' in §§ 102 and 103, but also those in § 101." 674 F.3d at 1330 n.3 (emphasis added). The Court thus recognized that only §§ 102 and 103 are specified, *textually*, as "conditions of patentability." In *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 543 F.3d 657 (Fed. Cir. 2008), the Court also stated that § 101 was a condition of patentability, but found that "sections 102 and 103," unlike § 101, "are explicitly entitled '[c]onditions for patentability.'" *Id.* at 661. This analysis again confirms that the only sections "explicitly" *specified* as "[c]onditions for patentability" are §§ 102 and 103. Nothing in *DealerTrack* or *Aristocrat* undermines the plain-language reading of the statute.

Second, according to the PTAB, the AIA's "legislative history" shows that "Congress intended the Office to consider challenges brought under § 101." JA33. But "if Congress intended that result, it did not so provide in the statute." *Hall v.*

⁶ The PTAB also suggested that *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012), supports its position. JA33. Yet the phrase "condition for patentability" appears nowhere in the opinion, and the Court never once cites § 282(b). *Mayo* provides no basis for overriding the statutory text.

United States, 132 S. Ct. 1882, 1893 (2012). Stray statements in the congressional record (even by bill sponsors) cannot override the statute’s plain language. *Ratzlaf v. United States*, 510 U.S. 135, 147-48 (1994); *see also Mims*, 132 S. Ct. at 752.

In any event, the legislative history, like the case law, cuts both ways. There are scattered references to *Bilski* and ““section 101 invention issues.”” JA34. But there are contrary references highlighting the former “lack of readily accessible prior art references” as the primary reason for authorizing CBM review. 157 CONG. REC. S1363 (daily ed. Mar. 8, 2011) (statement of Sen. Schumer); *see id.* at S1364 (“The proceeding is limited to certain business method patents, which, as noted above, are generally of dubious quality because unlike other types of patents, they have not been thoroughly reviewed at the PTO due to a lack of the best prior art.”); 157 CONG. REC. S5409 (daily ed. Sept. 8, 2011) (statement of Sen. Schumer). One set of references is no more telling than the other—which is why “investigation of legislative history” is often like “looking over a crowd and picking out your friends.” *Exxon*, 545 U.S. at 568 (internal quotation marks omitted).

Congress drafted the statute to cover those grounds *specified* in part II as conditions for patentability. If Congress decides that its transitional CBM proceedings should cover § 101 challenges, “it can amend the [AIA] accordingly. Until it does so, however, [this Court] must apply the statutory scheme as written.” *Teva Pharms.*, 395 F.3d at 1338; *Griffin v. Oceanic Contractors*, 458 U.S. 564,

576 (1982) (“Congress may amend the statute; [the Court] may not.”). In its present form, § 101 is not a permissible ground for CBM review.

4. These jurisdictional issues are preserved.

In its decision denying rehearing, the PTAB suggested that Versata’s jurisdictional challenges were “waived.” JA85-86. That is wrong. According to the PTAB, it is irrelevant that Versata timely pressed these issues at the institution stage, and the PTAB confronted and rejected them (erroneously) in its written decision. According to the PTAB, Versata was required to reassert these issues *after* “trial was instituted”—even though these already-resolved issues concern *institution*, not the merits. JA85. The PTAB is mistaken: its improperly expansive interpretation of its own jurisdiction is preserved and reviewable by this Court.

a. There is no rule of law or logic requiring a party to superfluously brief issues after a tribunal has rendered a definitive ruling. On the contrary, the law is clear that issues are preserved for review once they are pressed *or* passed upon; these issues were pressed *and* passed upon. *United States v. Williams*, 504 U.S. 36, 41 (1992). Versata’s institution-stage briefing provided the PTAB every opportunity to consider these issues, which the PTAB did (at length) in its institution decision. *See* pp. 17-34, *supra*. A contrary rule would require parties to burden courts and agencies with futile, repetitive briefing, which benefits no one. This is presumably why the PTAB failed to identify a single relevant precedent

supporting its “waiver” determination.⁷ Even were jurisdictional issues subject to waiver at all (which they are not, *John R. Sand & Gravel Co. v. United States*, 457 F.3d 1345, 1353 (Fed. Cir. 2006)), Versata did not waive any issues here.

Indeed, the PTAB’s own rules *precluded* Versata from submitting pointless briefing on these issues once the proceeding was instituted. The agency’s regulations bifurcate proceedings into two distinct stages. Under 37 C.F.R. § 42.207(a), a patent owner may file a preliminary response “setting forth the reasons why no post-grant review should be instituted.” Versata did exactly that by asserting each issue discussed above. JA2207-77. Once the PTAB institutes review, however, 37 C.F.R. § 42.220 limits the “[s]cope” of the patent owner’s response to “addressing any ground for unpatentability not already denied.” Again, Versata complied by addressing the substantive § 101 issue, which (unlike the

⁷ The PTAB’s citation to *Georgia Pac. Consumer Prods., LP v. Von Drehle Corp.*, 710 F.3d 527 (4th Cir. 2013), does not support the waiver finding (and it is not a Federal Circuit case, despite the PTAB’s citation to that effect). JA85. That case stands for the unremarkable proposition that a party waives a defense by failing to timely raise it. *Von Drehle*, 710 F.3d at 534 (“von Drehle did not raise its preclusion defenses ‘at the first reasonable opportunity’”). *Von Drehle* lends no credence to the PTAB’s suggestion that Versata waived its preclusion defense (much less the other jurisdictional issues) by asserting it at the first opportunity, losing, and then declining to violate the PTAB’s briefing rules by re-asserting this already-lost threshold issue again in its merits brief. Notably, *Von Drehle* also makes clear—contrary to the PTAB’s erroneous assumption—that a pending appeal does not negate the preclusive effects of a final district court judgment. *Id.*

jurisdictional challenges) had *not* “already [been] denied.” JA2367-461.⁸ Thus, under the plain text of the PTAB’s own scheme, the institution-related arguments are directed to the preliminary response—where the propriety of *institution* is resolved—but post-institution merits briefing is restricted to the unresolved substantive patentability questions. Versata should not be penalized for refusing to flout the rules.⁹

b. At the rehearing stage, the PTAB suggested that “both the Board and SAP understood that Versata waived” its institution-related arguments, citing (without elaboration) a single teleconference earlier in the proceeding. JA85.

But Versata never stated that it waived its jurisdictional arguments. JA37937-45. The teleconference at issue discussed *page limits* for briefing. Versata’s counsel merely indicated that its post-institution response “raise[s] the issues that we intended to have in this trial.” JA37941. Under the PTAB’s own rules, again, “ground[s] for unpatentability,” *not* jurisdictional arguments, are the

⁸ After a final written decision has issued, parties are permitted to seek rehearing by “identify[ing] all matters the party believes the Board misapprehended or overlooked.” 37 C.F.R. § 42.71(d). Versata again complied by identifying each of the PTAB’s errors, including those in its institution decision. JA2781-803.

⁹ The PTAB’s assertion that Versata waived its “preclusion” argument is particularly odd, since the PTAB itself maintains that claim preclusion is “not an issue for trial.” JA86 (also asserting that preclusion has “no effect” on the PTAB’s “duty to determine patentability” once a trial is instituted). The PTAB thus believed that superfluous briefing on the issue would be an act of futility, yet still asserted waiver.

only eligible “issue[s] for trial.” JA86; 37 C.F.R. § 42.220.¹⁰ Versata’s comment simply tracked the PTAB’s procedural scheme—it waived nothing.

Furthermore, the day before the teleconference, Versata filed a protective APA suit to further preserve its jurisdictional challenges. Versata anticipated that SAP would invoke 35 U.S.C. § 324(e) to argue, incorrectly, that Congress stripped this Court of the authority to review *any* aspect of the PTAB’s institution decision, effectively leaving unchecked the PTAB’s construction of its own power. JA40433-44. The PTO and SAP subsequently secured dismissal of that suit by arguing in part, and successfully, that it was unnecessary to consider Versata’s jurisdictional challenges under the APA because Versata could, in fact, obtain review of these challenges in this direct appeal. JA40792; JA41556; JA41589; *Versata Dev. Corp. v. Rea*, No. 1:13-CV-328, 2013 U.S. Dist. LEXIS 112718, at *38-39 (E.D. Va. Aug. 7, 2013).¹¹

¹⁰ The PTAB consistently applies this rule. *Medline Indus., Inc. v. Paul Hartmann AG*, IPR2013-00173, Conduct of the Proceeding, at *2-3 (PTAB Jan. 21, 2014) (Paper 35) (“The grounds upon which this proceeding was instituted are the only grounds relevant to this proceeding.”); *Office Patent Trial Practice Guide*, 77 FED. REG. 48757 (“Any claim or issue not included in the authorization for review will not be part of the trial.”).

¹¹ The APA suit presented the second and third jurisdictional issues raised here. JA40433-44. Versata continued to press the first jurisdictional issue—claim preclusion—in multiple requests for the PTAB to reconsider its original analysis in light of changed circumstances. JA37989-91; JA41645-50. The PTAB acknowledged Versata’s efforts to raise “claim and issue preclusion again, during the Trial,” but never explains why those efforts did not preserve the issue. JA86.

Indeed, on the *same day* that the PTO and SAP told a federal court that it was right to conclude that Versata would receive review of these issues in this direct appeal, JA41578; JA41589, the PTAB filed its rehearing decision asserting that the PTO and SAP believed “Versata [had] waived [these] issues,” JA85. Having secured dismissal of the APA lawsuit based on their arguments that Versata could receive the jurisdictional review it sought in this direct appeal, the Court should reject any inconsistent arguments now. *State of New Hampshire v. State of Maine*, 532 U.S. 742, 749 (2001).

c. Nor does § 324(e) limit this Court’s jurisdiction. That provision renders “final and nonappealable” the PTAB’s *initial* “determin[ation],” in “institut[ing] a post-grant review,” that “it is more likely than not” that a challenged claim is “unpatentable.” 35 U.S.C. § 324(a), (e). It applies to this determination “under [§ 324],” reflecting the PTAB’s tentative application of law to fact; it has nothing to do with the PTAB’s interpretation of § 324 itself (much less its interpretation of *other* sections, including § 321(b) and AIA § 18), the validity of PTO regulations, or the proper scope of the PTAB’s jurisdiction. There is a ““strong presumption”” against finding that Congress intended to prohibit judicial review of agency action. *Pregis Corp. v. Kappos*, 700 F.3d 1348, 1358 (Fed. Cir. 2012). Here, § 324(e) reflects Congress’ desire to avoid wasteful interlocutory challenges, nothing more; and there is every reason to preclude immediate review of the PTAB’s preliminary,

institution-related “determinations” when its *final* findings are subject to appeal. But § 324(e) does not suggest that the PTAB has unchecked, unreviewable discretion to unilaterally determine the scope of its power.

C. The PTAB Erred in Holding the Challenged Claims Patent Ineligible Under § 101.

Because the PTAB lacked authority to adjudicate SAP’s § 101 challenge, the Court should reverse and render without reaching the merits of the PTAB’s final written decision. JA78. But in any event, the PTAB erred on the merits.

Section 101 makes “any new useful process, machine, manufacture, or composition of matter” patent eligible. 35 U.S.C. § 101. Each of the challenged claims falls within the literal terms of the statute—method claims 17 and 27 are for a “process,” and media claims 26 and 28, as well as apparatus claim 29, are for a “manufacture” and “machine.” JA81-82. SAP nevertheless argues that these claims fall under the judicially created exception for “abstract ideas.” JA69. While the Court continues to search for a “consistent, cohesive, and accessible approach” to this analysis, *CLS Bank*, 717 F.3d at 1277, it is clear that a claim’s “abstractness” must “exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter,” *Research Corp. Techs. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010). And there appears to be a growing consensus that a claim is ineligibly abstract only if it “preempts all practical uses of an abstract idea.” *CLS Bank*, 717 F.3d at 1300 (Rader, C.J., joined by Linn, Moore, and O’Malley, J.J.,

concurring); *see also id.* at 1277 (Lourie, J., joined by Dyk, Prost, Reyna, and Wallach, J.J., concurring) (“turns primarily on the practical likelihood of a claim preempting a fundamental concept”).

SAP had the burden to make this showing under a preponderance standard, 35 U.S.C. § 326(e), and it failed to meet that burden as a matter of law. The PTAB erred in concluding otherwise for at least three reasons, each of which independently requires reversal: first, the PTAB never analyzed the claims as a whole; second, the PTAB erred in concluding that these computer software claims are directed to an abstract idea; and third, the PTAB erred in further failing to recognize that there is no dispute, let alone contrary proof, that the challenged claims do not preempt any fundamental concept or abstract idea.

1. The PTAB failed to analyze the claims as a whole.

Rather than analyzing the challenged claims as written, the PTAB analyzed its own caricature of those claims. JA72. In any § 101 analysis, “claims must be considered as a whole”—they cannot be “dissect[ed].” *Diehr*, 450 U.S. at 188; *In re Alappat*, 33 F.3d 1526, 1543-45 (Fed. Cir. 1994) (en banc) (“the dispositive inquiry is whether the claim *as a whole* is directed to statutory subject matter”); JA37843; JA37889. It is thus error “to strip away … limitations and instead imagine some ‘core’ of the invention.” *Ultramercial, Inc. v. HULU, LLC*, 722 F.3d 1335, 1350 (Fed. Cir. 2013).

But that is precisely what the PTAB did. The six pages dedicated to the PTAB's § 101 analysis do not once address any *actual limitation* of the claims, let alone the claims *as a whole*. JA72-77. Instead, after noting that the claims were “[g]enerally,” e.g., “directed to a method of determining a price,” the PTAB began its analysis by concluding that “each of the challenged claims involves the use of an abstract idea: determining a price using organizational and product group hierarchies, which are akin to management and organizational charts.” JA72. It then proceeded to analyze the patentability of this core “idea,” without considering the actual language of the claims. JA73-77. This flawed approach constitutes legal error and rendered the PTAB’s analysis unreliable. *Ultramercial*, 722 F.3d at 1350.

Focusing on an abstracted generalization rather than the actual claim limitations could make any claim appear patent ineligible. As the Supreme Court explained, “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Mayo*, 132 S. Ct. at 1293. To appreciate the problematic nature of this approach, one need only imagine that the PTAB had characterized the claims as SAP did in its prior appeal to this Court: “a very *specific* way to determine the price of a product using a computer.” JA35570. Had the PTAB based its analysis on this characterization, rather than its artificial abstraction, it would have doubtless found the claims patent eligible. *Ultramercial*, 722 F.3d at 1348 (“[If] the claims tie the otherwise abstract idea to a *specific way*

of doing something with a computer, ... they likely will be patent eligible.”). In any event, the PTAB’s analysis—which departs from the actual claim limitations—is inherently defective and foreclosed by precedent.

2. The challenged claims are not directed to an abstract idea.

a. The claims are directed to a specific application of computer software.

When the claims are considered as a whole, they specify far more than “determining a price using organizational and product group hierarchies.” JA72. Claims 17 and 26, for example, first require “arranging a hierarchy of organizational groups … [and] a hierarchy of product groups.” JA81. Then this computer data undergoes several further steps: (1) “storing [associated] pricing information in a data source”; (2) “retrieving applicable pricing information corresponding to” the products and organizations “in each branch of the hierarchy … in which [it] is a member”; (3) “sorting the pricing information according to” the hierarchies; (4) “eliminating any of the pricing information that is less restrictive”; and (5) “determining the product price using the sorted pricing information.” JA81. These steps, like the subset in claims 27-29, JA81-82, constitute a specific approach to determining the price of a product on a computer, using hierarchies so as to enable the desired benefit for the computing environment: fewer software tables and searches, leading to improvements in

computer performance and ease of maintenance.¹² *Versata*, 717 F.3d at 1258-59. The challenged claims are thus not directed to an abstract idea at all, but instead to a very specific application of computer software—an application that, embodied in Versata’s Pricer software, took the market by storm. *See id.*; JA35570.

This observation should end the § 101 analysis: considered as a whole, the claims are not directed to an abstract idea, but to a particular and very practical software application—a “hierarchical pricing engine.” *Versata*, 717 F.3d at 1259. But even were the PTAB right (though it was wrong) to conclude that each claim “involves the use of an abstract idea,” JA72, the claimed “use” is nonetheless a practical application in a powerful piece of innovative software. *See Alappat*, 33 F.3d at 1543 (“[A]bstract ideas constitute disembodied concepts or truths which are not ‘useful’ from a practical standpoint standing alone, i.e., they are not ‘useful’ until reduced to some practical application.”); *see also Bilski v. Kappos*, 130 S. Ct. 3218, 3230 (2010) (“an *application* of a ... formula to a known structure or process may well be deserving of patent protection”); JA37843; JA37886. In other words, to whatever extent “determining a price using organizational and group hierarchies” reflects “an abstract idea” found in the challenged claims, JA72,

¹² The PTAB disregarded these benefits because they are not literally recited in the claims. JA77. But benefits flowing from a claimed invention are relevant whenever, as here, they are enabled by the recited claim elements. *Genetics Inst., LLC v. Novartis Vaccines & Diagnostics, Inc.*, 655 F.3d 1291, 1307 (Fed. Cir. 2011); JA34764.

that idea is tied “to a specific way of doing something with a computer” in those claims, *Ultramercial*, 722 at 1348. They are patent eligible. *Id.*

b. The claims are tied to a machine.

The patent eligibility of the challenged claims is further confirmed by their inextricable tie to a machine. *Id.* (“[T]he fact that a claim is limited by a tie to a computer is an important indication of patent eligibility.”); *In re Warmerdam*, 33 F.3d 1354, 1360-61 (Fed. Cir. 1994) (holding that a claim to “a machine having a memory” containing specified data “is for a machine, and is clearly patentable subject matter”); *Research Corp.*, 627 F. 3d at 869 (holding that a claim requiring “a memory” is not abstract). The PTAB construed the claim term “data source” as “computer storage medium,” thus properly recognizing that all five claims can only be performed by a machine. JA68; *Versata*, 717 F.3d at 1258-59.

But the PTAB then contradicted its construction by concluding that the “underlying process” in the claims could “be performed via pen and paper.” JA73. Again, the PTAB erred in analyzing some abstracted “underlying process,” when the actual claims require computer hardware. JA73; JA81. In fact, the claimed invention has no purpose other than on a computer—the only reason to arrange the hierarchical data into a computer storage medium and perform the other recited steps is to improve computer performance and ease of maintenance. And there is no evidence that the claims can be performed via pen and paper. The PTAB

suggested that Liebich testified to this effect, JA73, but he did no such thing. In the cited deposition excerpt, SAP's counsel simply walked Liebich through an explanation of the invention using notes and diagrams. JA34774-803. Of course every patented invention must be explainable using notes and diagrams—otherwise it would fail § 112's written description requirement. Neither Liebich nor Siegel demonstrated that the claims can be performed via pen and paper.

The PTAB did recognize that the claims have no "Practical Application Except in Connection with a Computer." JA73. But surprisingly, it concluded that this concrete tie to a machine indicated that the invention was abstract.¹³ JA73-74. The on-point case law holds to the contrary. *Ultramercial*, 722 F.3d at 1348; *Warmerdam*, 33 F.3d at 1360-61.

The PTAB also attempted to minimize the significance of the inextricable tie to a machine through its observation that the claimed software can be installed and run on "general purpose computer hardware." JA74.¹⁴ But the invention lies in the

¹³ The PTAB did so by misapplying *Gottschalk v. Benson*, 409 U.S. 63 (1972), which involved a claim so broad that it "would wholly pre-empt [a] mathematical formula." *Id.* at 71-72. Here, in contrast, there is no preemption.

¹⁴ This analysis also pertains to the machine-or-transformation test, which suggests that a claimed process is patent eligible if "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008) (en banc); see also *Mayo*, 132 S. Ct. at 1303 (noting that the machine-or-transformation test remains a "useful tool"). Each of the challenged claims satisfies this test—they are either tied to a machine, or for a machine. JA81-82, JA68 (Claim 17, 26-29: "data source," "a computer

claimed hierarchical pricing engine (computer software), and as the Court has held, once installed, specific software transforms general purpose hardware into a special purpose machine. *Alappat*, 33 F.3d at 1545 (“such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software”). Just so here: the claims delineate specialized software that, when installed, transforms a general purpose computer into a specialized machine. Indeed, that is why SAP’s customers—who had already paid for SAP’s pricing software—paid millions more to add Pricer as a bolt-on to their enterprise computer systems. *Versata*, 717 F.3d at 1259.

3. The challenged claims are meaningfully limited and non-preemptive.

The challenged claims are not abstract; they are directed to a specific software application and tied to a concrete machine. That is more than sufficient to satisfy § 101. *Ultramercial*, 722 F.3d at 1348. But even if the claims were directed to an “abstract idea,” they “incorporate sufficient meaningful limitations to ensure that the claims are more than just an abstract idea and not just a mere drafting effort designed to monopolize the abstract idea itself.” JA73; *Mayo*, 132 S. Ct. at

storage medium”; Claim 27: “computer implemented”; Claims 26, 28: “computer readable storage media”; Claim 29: “apparatus” with “memory” and “processor”). Indeed, both experts agreed that the machine prong of the machine-or-transformation test is satisfied. JA37566; JA34732-47.

1297. The PTAB concluded that the claims were not meaningfully limited, but it reached that conclusion by ignoring the actual limitations in the claims—and by improperly shifting the burden of proving otherwise onto Versata. JA75-77.

a. The claims do not preempt any abstract idea.

Critically, there can be no doubt that the challenged claims are not mere “drafting effort[s] designed to monopolize” an “abstract idea.” JA73. Indeed, the PTAB appeared to recognize, and SAP’s expert conceded, that the claims do not preempt “determining a price using organizational and product group hierarchies.” JA72; JA77; JA37022-23. That is, hierarchies can be used to determine a price without infringing the patent. JA37564-65. The PTAB sought to dismiss this point with a non sequitur: “the fact that the claims could be drafted differently does not demonstrate that the additional limitations are meaningful.” JA77. But the question is not whether the claims “could be drafted differently”; the question is whether the claims *as drafted* preempt the abstract idea. *Ultramercial*, 722 F.3d at 1350. On that point, the PTAB was silent.

The PTAB noted that the addition of insignificant post-solution activity will not render an abstract idea patent eligible, even though it may technically allow others to use the idea without infringing. JA77; *Parker v. Flook*, 437 U.S. 584, 590 (1978). But that rule has nothing to do with Versata’s claims. Their limiting steps, even as the PTAB abstracted them—“storing, retrieving, sorting, eliminating, and

determining,” JA76—are neither insignificant nor post-solution. These steps are instead part and parcel of the solution activity: they delineate the very specific way that a price is determined using hierarchies in the ’350 patent. JA81-82.

And one can “determin[e] a price using organizational and product group hierarchies” without practicing the *claimed* manner of storing, retrieving, sorting, eliminating, and determining (or the claimed subsets thereof). In other words, the claims are *demonstrably* non-preemptive. For example, the claims require retrieving pricing information at multiple levels of both customer and product hierarchies, and then processing these retrieved data to determine a price. JA2906-07. Thus, to practice these claims, one must retrieve multiple potentially applicable pricing adjustments in each hierarchy. But there are other options: for example, rather than retrieving multiple pricing adjustments, a computer might instead *stop* when it finds a relevant pricing adjustment, and retrieve only that one. JA37720. That describes SAP’s pre-infringing searching strategy—an approach that SAP used before it modified its software to make it “just like” Versata’s Pricer software. JA35374. This approach is not foreclosed by the claims. Another example—one that SAP pressed repeatedly in the district court litigation—is to avoid performing the claim steps for *both* customer and product hierarchies. JA35570.

The challenged claims thus do not preempt “determining a price using ... hierarchies,” and the PTAB failed to appreciate this dispositive absence of

preemption. JA72. The claims further do not append insignificant post-solution activity to “determining a price using … hierarchies.” JA72. To the contrary, they claim a specific application of computer pricing software, each limitation of which is integral to the innovative hierarchical pricing solution disclosed. JA81-82.

b. The claim limitations are meaningful, and the PTAB erred in shifting the burden of proof to Versata.

The PTAB’s conclusion that the limitations of the challenged claims are “conventional and routine”—limitations it never walked through nor addressed in any detail—was also error, JA75, for at least three reasons.

First, the PTAB *shifted SAP’s burden of proof onto Versata*: “Versata and [its expert] fail to establish that the additional ‘specific’ steps that are appended to the abstract idea provide meaningful limitations.” JA76. But it was never Versata’s burden to establish that the claim limitations are meaningful; it was SAP’s burden to establish that they are not. 35 U.S.C. § 326(e); JA75-77. And SAP failed to carry that burden—its expert neglected to address the actual claim limitations and simply offered a bald assertion that the claims involved “conventional activities.” JA3264-65. When Versata pointed this out, the PTAB held that Versata failed to meet another purported burden “to demonstrate that [SAP’s expert] believed the additional steps to be anything other than conventional, routine steps that would commonly be used to implement the abstract idea.” JA76. The PTAB thus

effectively required Versata to both prove validity and disprove invalidity. JA76.

This was legal error.¹⁵ 35 U.S.C. § 326(e).

Second, the PTAB erred in conflating the inquiries of §§ 102 and 103 with the “conventional and routine” inquiry of § 101. While the PTAB cited the rule that § 101 “does not involve the familiar issues of novelty and obviousness that routinely arise under §§ 102 and 103,” it then appeared to *sua sponte* resurrect the novelty arguments that SAP had abandoned before trial in the district court and again in the PTAB proceeding: “more likely than not, Versata’s claims lack novelty over the prior art, [which] Liebich does not address when considering that the additional steps were [meaningful].” JA76. To justify its holding, the PTAB thus resurrected novelty arguments that SAP twice abandoned—while ignoring the rule that those arguments have no place in a § 101 analysis. JA76.

Third, the PTAB erroneously disregarded the commercial success of Versata’s invention, concluding that its “improvement in marketplace technology does not demonstrate that the additional steps are anything other than conventional, routine steps that are a consequence of implementing the abstract idea.” JA76. To

¹⁵ After shifting the burden to Versata and Liebich, JA76, the PTAB also offered the conclusory assertion it “credit[ed] the testimony of Dr. Siegel over that of Dr. Liebich that the additionally claimed steps [are] conventional,” JA77. It then cited to Siegel’s report, which contained only his conclusory assertion without addressing the actual claim language. JA77; JA3264-65. Such statements are not evidence, *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000), and do not change the legal nature of the PTAB’s error, JA1322; JA1312-13.

the contrary, this Court has explained that such marketplace improvements are important considerations for § 101: “inventions with specific applications or improvements to technologies in the marketplace are not likely to be so abstract that they override the statutory language and framework of the Patent Act.” *Research Corp.*, 627 F.3d at 869. It simply makes no sense to assume that the scores of high-tech companies that paid millions for the software product practicing the patent did so merely to get the capability to perform meaningless, routine, or conventional steps. *Versata*, 717 F.3d at 1258-59. Indeed, it makes no sense to hold that this “breakthrough” software patent, with such a substantial market impact, *id.*, is nothing more than an abstraction.

D. Alternatively, the Court Should Remand for the PTAB To Reapply § 101 Using a Proper Claim Construction.

While the claims of the ’350 patent are patent eligible even under the PTAB’s “broadest” constructions, claim construction can affect the § 101 analysis. *Bancorp Serv., LLC v. Sun Life Assurance Co. of Canada*, 687 F.3d 1266, 1273-74 (Fed. Cir. 2012) (“determination of patent eligibility requires a full understanding of the basic character of the claimed subject matter”). And here, the PTAB erred in applying an overly broad claim construction. Therefore, if the Court concludes that the claims are patent ineligible as construed, it should remand for reconsideration under a different, and narrower, claim construction—one that is consistent with the

district court's unchallenged construction and that further establishes the patent eligibility of the claims. JA2442-43.

1. The PTAB erred in ignoring *stare decisis*.

Stare decisis demands that an inferior tribunal "follow...the decisions of a superior tribunal." *Nat'l Org. of Veterans Advocates*, 260 F.3d at 1373. Claim construction is subject to this doctrine—indeed, the Supreme Court cited the uniformity and finality promised by *stare decisis* as a compelling reason to treat claim construction as a legal question. *Markman v. Westview Instr.*, 517 U.S. 370, 390-91 (1996). In the prior litigation, the district court already construed the disputed terms of the '350 patent, including the "pricing information" term central to SAP's CBM petition. JA3741-66; JA2018. Versata explained that Supreme Court precedent rendered these constructions binding in this proceeding, JA2441, but the PTAB disagreed on the ground that the Article III district court was, in effect, not a superior tribunal, JA62.

That was error. Article III district courts have power to review the PTAB's actions under the APA, 5 U.S.C. §§ 701-06, and 35 U.S.C. §§ 145, 146. And district courts "render no judgments...that are subject to later review or alteration by administrative action." *Chicago & S. Air Lines, Inc. v. Waterman S.S. Corp.*, 333 U.S. 103, 113-14 (1948). The district court thus assuredly is "superior" to the PTAB, and its claim constructions should have been respected. This result also

harmonizes with the AIA’s “fundamental purpose”—to provide an inexpensive alternative to “be used instead of, rather than in addition to, civil litigation.” 157 Cong. Rec. S1363-64 (daily ed. Mar. 8, 2011) (statement of Sen. Schumer). If CBM review is instituted before a court engages in claim construction, then it makes sense for the PTAB to construe the claims. But if the court has already issued constructions, the PTAB’s decision to repeat that process generates conflicting results, invites interbranch tension, and unnecessarily wastes the time and resources that the CBM program was designed to save.

The PTAB thus erred in disregarding the district court’s narrower construction—particularly for the “pricing information” term, JA62-67; JA3741-66; JA2441; JA2796-97—which was *stare decisis*.

2. The PTAB erred in applying BRI.

a. The BRI standard is not appropriate for CBM review.

In adjudicatory proceedings, the standard enunciated in *Phillips v. AHW Corp.*, governs claim construction. 415 F.3d 1303, 1312-19 (Fed. Cir. 2005) (en banc). In examinational proceedings, this Court has permitted use of the so-called “broadest reasonable interpretation” or “BRI” standard. *In re Skvorecz*, 580 F.3d 1262, 1267 (Fed. Cir. 2009). But as the Court explained, the BRI

protocol is solely an examination expedient, not a rule of claim construction. Its purpose is to facilitate exploring the metes and bounds to which the applicant may be entitled, and thus to aid in

sharpening and clarifying the claims during the application stage, when claims are readily changed.

Id. Notwithstanding this Court’s directive that BRI is “solely an examination expedient,” the PTAB held that this protocol should be applied in adjudicatory CBM reviews—which are contested trials held before administrative judges—because patent holders can theoretically amend their claims. JA53-54.

That justification falls short. While “claims are readily changed” in examinational proceedings, *Skvorecz*, 580 F.3d at 1267, that is not true for the new AIA proceedings. Patentees in (re)examinations have the right to make “any amendment,” *In re Yamamoto*, 740 F.2d 1569, 1572 (Fed. Cir. 1984), but patent holders in AIA trials have no such right—only a limited opportunity to “file 1 motion to amend the patent,” 35 U.S.C. § 326(d). And the PTAB is free to deny that motion whenever it decides that the patent owner has not met “the burden to show entitlement to the relief requested.” JA38047; 37 C.F.R. § 42.20(c). Further, to the extent the PTAB permits amendment, it is limited to cancelling claims or substituting one issued claim for one amended claim. 37 C.F.R. § 42.221. This motion-practice procedure—again highlighting the adjudicatory nature of the new reviews—differs radically from the right to amend claims in the examinational context, and fails to justify use of the BRI standard.

Even if the PTAB were right to disregard *stare decisis*, it should have applied the *Phillips* standard—reflecting the view of ordinary skilled artisans, not an artificially “broad[]” construction—in this adjudicatory CBM review.

b. The PTO lacked authority to apply the BRI standard to this CBM review.

The PTAB erred in applying BRI for another reason: the decision to extend that substantive standard to the new reviews exceeded the PTO’s limited rulemaking authority under 35 U.S.C. §§ 2(b)(2) and 326.

Section 2 sets out the PTO’s “[p]owers,” authorizing the PTO to “establish regulations [that] govern the conduct of proceedings in the Office.” *Id.* § 2(b)(2). This authorization to regulate “conduct,” which constitutes “the broadest of the Office’s rulemaking powers,” permits only “procedural” rulemaking. *Cooper Techs. Co. v. Dudas*, 536 F.3d 1330, 1335 (Fed. Cir. 2008); *Tafas v. Doll*, 559 F.3d 1345, 1352 (Fed. Cir. 2009). In short, Congress has not granted the PTO substantive rulemaking authority.

But in connection with the new AIA reviews, the PTO issued 37 C.F.R. § 42.300(b), which provides that “[a] claim in an unexpired patent shall be given its broadest reasonable interpretation.” This new regulation affects substantive outcomes, not merely procedural conduct. *Cooper*, 536 F.3d at 1335. The PTAB did not declare this new rule procedural. JA56-58. Instead, it held that § 326—governing regulations for the “[c]onduct of post-grant review”—provided the PTO

with broad rulemaking authority beyond the powers previously granted to the Office in § 2. JA58; 35 U.S.C. § 326(a).

This makes little sense. The Court has already held that the “conduct of proceedings” addressed in § 2 covers only procedural regulations. *Cooper*, 536 at 1335. Given this holding, it is incongruous to think that the “[c]onduct of post-grant review” addressed in § 326 covers substantive regulations. Furthermore, nothing in § 326 suggests that this new section provides the PTO with authority to override *Phillips*, alter the legal rules governing claim construction, or import an “examination expedient” into the AIA’s new adjudicatory trials. *Skvorecz*, 580 F.3d at 1267. The PTAB is correct that Congress “does not...hide elephants in mouseholes.” JA58. Had Congress intended to dramatically expand the PTO’s rulemaking authority to encompass substantive regulations, it would have amended § 2(b)(2). Its failure to do so leaves 37 C.F.R. § 42.300(b) *ultra vires*.

3. Even under the BRI, the PTAB misconstrued “pricing information.”

At the outset of the proceeding, both Versata and SAP agreed that, even under BRI, the term “pricing information” should be construed to require “denormalized numbers.” JA2023; JA2244. Such numbers do “not have fixed units and may assume a different meaning and different units”—determined by the software during “run time”—“depending on the pricing operation that is being performed.” JA2245. As the district court recognized, the “specification

consistently describes ‘this invention’ as utilizing denormalized numbers—the patent discusses ‘this invention’ in the context of denormalized numbers of tables no less than ten times,” providing “convincing evidence that the scope of the invention is limited” in this manner. JA3749; JA2898-904. SAP featured the alleged absence of “denormalized numbers” in its products as a centerpiece of its prior appeal to this Court, *Versata*, 717 F.3d at 1263, and urged the PTAB to construe the challenged claims as requiring this limitation in its petition, JA2023.

Notwithstanding the uniform view that the claims require “denormalized numbers,” the PTAB reached the opposite conclusion. According to the PTAB, under BRI, “this invention” did not require denormalized numbers after all. JA3749; JA63-67; JA12-17; JA2243-46; *Abbott Diabetes*, 696 F.3d at 1149 (“[under BRI,] claim language should be read in light of the specification as it would be interpreted by one of ordinary skill”). That was error. The PTAB’s too-broad construction of this core term necessarily undermined its “full understanding of the basic character of the claimed subject matter.” *Bancorp*, 687 F.3d at 1273-74. Thus, if the Court elects not to render for Versata, it should remand for a “determination of patent eligibility” under a proper construction. *Id.*

VI. CONCLUSION AND RELIEF REQUESTED

For these reasons, this Court should reverse the PTAB's final written decision, holding that: 1) the PTAB lacked authority to adjudicate SAP's petition;

or 2) the claims of the '350 patent recite patent-eligible subject matter. Alternatively, the Court should reverse and remand for a new § 101 analysis under a proper claim construction.

Date: March 17, 2014

Respectfully submitted,

/s/ Mike McKool, Jr.

Mike McKool, Jr.
Principal Counsel
Daniel L. Geyser
McKOOL SMITH, P.C.
300 Crescent Court, Suite 1500
Dallas, TX 75201
(214) 978-4000

Joel L. Thollander
Steven J. Pollinger
McKOOL SMITH, P.C.
300 W. 6th Street, Suite 1700
Austin, Texas 78701
(512) 692-8700

Nancy J. Linck
Martin M. Zoltick
ROTHWELL FIGG ERNST &
MANBECK PC
607 14th Street, NW, Suite 800
Washington, DC 20005
(202) 783-6040

*Attorneys for Appellant Versata
Development Group, Inc.*

ADDENDUM

Trials@uspto.gov

571-272-7822

Paper 36

Entered: January 9, 2013

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAP AMERICA, INC.
Petitioner,

v.

VERSATA DEVELOPMENT GROUP, INC.
Patent Owner.

Case CBM2012-00001 (MPT)
Patent 6,553,350

Before SALLY C. MEDLEY, MICHAEL P. TIERNEY, and RAMA G. ELLURU,
Administrative Patent Judges.

TIERNEY, *Administrative Patent Judge.*

DECISION
Institution of Covered Business Method Review
37 C.F.R. § 42.208

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I. Introduction

SAP has filed a petition seeking covered business method review of Versata's 6,553,350 ('350) patent pursuant to Section 18 of the Leahy-Smith America Invents Act (AIA)¹. The patent owner, Versata, has filed a patent owner preliminary response (POPR) opposing the institution of the review. Paper No. 29. We have jurisdiction under 35 U.S.C. § 324.

The standard for instituting a covered business method review is set forth in 35 U.S.C. § 324(a), which provides as follows:

THRESHOLD --The Director may not authorize a post-grant review to be instituted unless the Director determines that the information presented in the petition filed under section 321, if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.

SAP challenges claims 17 and 26-29 of the '350 patent as unpatentable for failure to comply with 35 U.S.C. §§ 101, 102, and 112, 1st and 2nd paragraphs.

We grant the petition as SAP has demonstrated that claims 17 and 26-29 are more likely than not unpatentable under 35 U.S.C. §§ 101 and 102. SAP however, has not demonstrated a likelihood that Versata's claims are unpatentable under 35 U.S.C. § 112, 1st and 2nd paragraphs therefor these grounds of unpatentability do not form a part of the review. 37 C.F.R. 42.408(a).

¹ Pub. L. No. 112-29, 125 Stat. 284 (2011).

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II. Background

A. Versata's '350 Patent

Versata's '350 patent is directed to a method and apparatus for pricing products and services. SX 1001, '350 patent, 3:9-13.² The central concept of the '350 patent is hierarchies and the hierachal arrangement of data. SX 1005, ¶ 20.³

The '350 patent states that its "invention operates under the paradigm of WHO (the purchasing organization) is buying WHAT (the product)." '350 patent, 3:24-25. An example of the WHO/WHAT paradigm is depicted in Figure 1 of the '350 patent below:

FIG. 1
PRIOR ART

WHO	WHAT 486/33 CPU	486/50 CPU	486/66 CPU
ADAM	\$40	\$60	\$80
BOB	\$42	\$58	\$72
CHARLIE	\$44	\$68	\$92

² SAP's exhibits are referred to as SX and Versata's exhibits are referred to as VX.

³ Declaration of SAP expert, Michael Siegel, Ph.D.

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According to the '350 patent, the WHO/WHAT paradigm was known in the art.

Id., Fig. 1, 4:16-18. The '350 patent however, states that prior art pricing tables for WHO/WHAT (customer/products) required large tables of data. *Id.*, 1:52-59.

The '350 patent invention is said to improve upon the prior art and reduce the need for large tables of data by arranging customers into a hierarchy of customer groups and products into a hierarchy of product groups. *Id.*, 3:24-27, 41-42. Specifically, in the '350 patent, WHO is said to be defined by creating an organizational hierarchy of organizational groups, where each group represents a characteristic of the organizational group. *Id.* An example of an arrangement of an organization customer group is depicted below in Fig. 4A of the '350 patent:

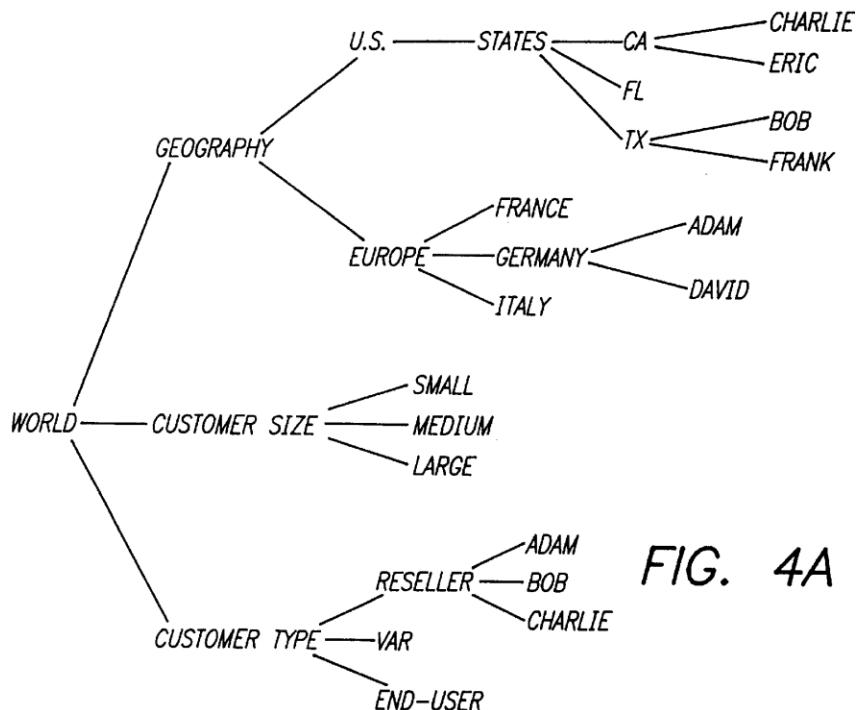


FIG. 4A

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Similarly, a product group hierarchy for products (WHAT) is also defined. *Id.*, Fig. 4B, 4:26-28. Pricing information is then associated with the customer and product groups. *Id.*, 8:17-25. As such, special pricing adjustments may be defined as applying to all members of a specific customer group or a specific product group. *Id.*, 3:26-49.

B. Procedural History

In 2007, Versata sued SAP for infringement of, *inter alia*, the '350 patent. The case proceeded to trial and a jury found infringement and awarded damages. SX 2039, Jury Verdict (Aug. 26, 2009). The district court confirmed the infringement verdict for the '350 patent, but reversed other rulings unrelated to the '350 patent, resulting in a new trial on damages. POPR, 7. In the second trial, the jury found that an SAP post-patch software continued to infringe, and awarded lost-profits damages and reasonable royalty damages. The district court upheld those awards. *Id.*

SAP appealed the district court's Final Judgment to the U.S. Court of Appeals for the Federal Circuit on October 11, 2011. *Versata Software, Inc. v. SAP America, Inc.*, Nos. 2012-1029, -1049. The appeals have been fully briefed and are currently pending. Of note, SAP did not appeal the district court's claim

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construction, and there are no issues on appeal relating to the validity of the '350 patent. POPR, 8.

III. Analysis

There are five claims challenged in this proceeding, claims 17 and 26-29. The claims are directed to methods and apparatuses for determining the price of a product offered to a purchasing organization. To better understand the challenges brought against these claims, we begin by first construing the claims.

A. Claim Construction

During a review before the Board, we provide claims with the broadest reasonable interpretation in light of the specification. 37 C.F.R. 42.300(b). *See*, 77 Fed. Reg. 157 (August 14, 2012) at 48697-48698. We begin our analysis with the plain language of the claims themselves but look to the specification for guidance as to how one skilled in the art would understand the ordinary meaning of the claims. In interpreting claims care must be exercised as there is a fine line between interpreting claims in light of the specification and reading limitations into the claims from the specification. *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998).

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The parties have identified four claim terms for which claim construction is sought: “sorting the pricing information,” “the pricing information that is less restrictive,” “pricing type(s),” and “pricing information.” Claim 17 is illustrative of the claims for which review is sought and reads as follows:

17. A method for determining a price of a product offered to a purchasing organization comprising:

arranging a hierarchy of organizational groups comprising a plurality of branches such that an organizational group below a higher organizational group in each of the branches is a subset of the higher organizational group;

arranging a hierarchy of product groups comprising a plurality of branches such that a product group below a higher product group in each of the branches is a subset of the higher product group;

storing **pricing information** in a data source, wherein the **pricing information** is associated, with (i) a **pricing type**, (ii) the organizational groups, and (iii) the product groups;

retrieving applicable **pricing information** corresponding to the product, the purchasing organization, each product group above the product group in each branch of the hierarchy of product groups in which the product is a member, and each organizational group above the purchasing organization in each branch of the hierarchy of organizational groups in which the purchasing organization is a member;

sorting the pricing information according to the **pricing types**, the product, the purchasing organization, the hierarchy of product groups, and the hierarchy of organizational groups;

eliminating any of the **pricing information that is less restrictive**; and

determining the product price using the sorted pricing information.

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'650 Patent, SX 1001 (emphasis added). Claim 24, which was not challenged by SAP, and is not part of this proceeding, depends from claim 17 and limits claim 17 as follows:

24. The method of claim 17 wherein the **pricing information** comprises denormalized pricing adjustments.

Id. (emphasis added).

The four terms for which claim construction is sought are analyzed below.

1. Sorting the Pricing Information

SAP requests that the Board construe the term “sorting the pricing information” to mean that the pricing information is ordered. Pet., 11. Versata does not oppose this construction. POPR, 58-60.

SAP’s expert, Dr. Siegel,⁴ testifies that the plain meaning of “sorting the pricing information” is that the pricing information is ordered. SX 1005, ¶ 98. This construction is consistent with Versata’s proposed construction in the related district court proceeding, and this is the construction that was adopted by the

⁴ The field of the invention is computerized financial systems. SX 1005, ¶ 16. A person of ordinary skill in the art would have at least a bachelor’s degree in computer science and experience developing computerized financial systems. *Id.*, ¶ 18. Dr. Siegel has a Ph.D. in computer science and extensive experience in financial services software. *Id.*, ¶¶ 1-11. We conclude that Dr. Siegel is qualified to testify as to the understanding of one skill in the art.

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district court. SX 1012,⁵ 16-17. We credit Dr. Siegel’s testimony and hold that sorting the pricing information means that the pricing information is ordered.

SAP and Versata disagree however, on when the pricing information is sorted. Specifically, Versata contends that the information must first be retrieved and then sorted, whereas SAP contends the language of claim 17 does not imply or require a temporal limitation forcing the sorting to occur after retrieving. Pet., 12-13 and POPR, 60.

The plain language of claim 17 does not require that the information be retrieved first and then sorted. This is in contrast to claim 1, which requires “sorting the **retrieved** information.” Dr. Siegel testifies that this is an important distinction and concludes that there is no basis in claim 17 for requiring retrieving to happen before sorting or vice versa. Dr. Siegel concludes that the term “sorting the pricing information” in the context of the ’350 patent simply means that pricing information is sorted either before or after the information is retrieved. SX 1005, ¶ 98.⁶ SAP also directs our attention to the trial testimony of a Versata expert, Dr.

⁵ Memorandum Opinion and Order Regarding Claim Construction, *Versata v. SAP Litigation*, 07-cv-00153.

⁶ The district court held that the retrieving step must be performed before the sorting step as claim 1 requires the “retrieved pricing information” be sorted. SX 1012, 15-16. As noted by Dr. Siegel, claim 17 does not require “retrieved” pricing information be sorted.

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Nettles, who indicated that there was not always a need to change the retrieved data set to fall within the definition of “sort.” Pet., 13, SX 1018, 81-82.

We agree with SAP that the ordinary meaning of “sorting the pricing information” in claim 17 does not require that the information be retrieved and then sorted. There are circumstances however, where a claim term may be construed more narrowly than its ordinary meaning. Such circumstances include where a patentee sets out a definition and acts as its own lexicographer and where the patentee disavows the full scope of a claim term in the specification. *Thorner v. Sony Computer Entm’t. America L.L.C.*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

Versata fails to direct our attention to sufficient and credible evidence that the ’350 patent restricted the term “sorting the pricing information” to sorting retrieved information. While Versata directs the Board’s attention to four exhibits, VX 2061, VX 2063, VX 2064, and SX 1018, none of the exhibits demonstrates that the specification defined the term or sought to disavow sorting the information prior to retrieval. Specifically, the exhibits reflect trial testimony excerpts and a closing statement, none of which provide an underlying basis for their positions.

ActiveVideo Networks Inc. v. Verizon Commc’ns Inc., 694 F.3d 1312 (Fed. Cir. 2012) (district court did not err in granting JMOL where expert opinion was conclusory and lacked factual support).

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We credit the testimony of SAP's expert, Dr. Siegel, and conclude that claim 17 does not require a temporal limitation forcing the sorting to occur after retrieving.

2. The Pricing Information That Is Less Restrictive

SAP contends that the term "the pricing information that is less restrictive" is insolubly ambiguous, but employs the district court construction for purposes of prior art analysis. Pet., 11-12. Versata disagrees that the term is insolubly ambiguous and directs our attention to the fact that SAP initially offered a claim construction in the related district court proceeding. POPR, 57-58, SX 1012, 17, fn. 3. Further, Versata requests that we adopt the district court construction and construe the term to mean "less specifically applicable to a product, a purchasing organization, an organizational group or a product group." *Id.* 17-18.

We agree with Versata and adopt the district court's construction of the term "pricing information that is less restrictive." Specifically, we construe the term as meaning "less specifically applicable to a product, a purchasing organization, an organizational group or a product group."

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3. Pricing Types and Pricing Adjustments

SAP contends that the term “pricing types” means “a class or category of pricing adjustments.” Pet., 12. Versata did not oppose this construction.

SAP relies upon the testimony of Dr. Siegel, who testifies that the ‘350 patent leads to an understanding that the term “pricing type(s)” is “a class or category of pricing adjustments.” SAP notes that the parties agreed at the district court to this construction.

We credit Dr. Siegel’s testimony and hold that the term “pricing types” means a class or category of pricing adjustments.

SAP further defines the term “pricing types” by contending that pricing types means a class or category of pricing adjustments and that the term pricing adjustments means “a denormalized number that may affect the determined price.” Pet., 12 and 14. SAP then defines denormalized number as meaning nothing more than a user, at data entry time, associating units with a number and specifying how the number is to be applied, and then, at runtime, a system simply uses that information. *Id.*, 14-15. Versata agrees that the term “pricing adjustment” is limited to denormalized numbers and contends that all of the challenged claims require denormalized numbers. POPR, 26. We disagree that “pricing adjustment” is limited to denormalized numbers and do not adopt this construction.

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The plain and ordinary meaning of the term “pricing adjustment” does not require the use of denormalized numbers nor do the ’350 claims and specification require such an interpretation. For example, ’350 claim 1 requires the use of pricing information. Dependent claim 6 depends from claim 1 and states that the pricing information comprises pricing adjustments. Dependent claim 7 depends from claim 6 and states that pricing adjustments comprise denormalized numbers. Similarly, claim 17 requires the use of pricing information and claim 24, which depends from claim 17, states that pricing information comprises *denormalized* pricing adjustments. To read pricing adjustments as restricted to denormalized pricing adjustments would render the term denormalized in claim 24 redundant and render claim 7 superfluous. Accordingly, the ’350 claims themselves create a rebuttable presumption that the term “pricing adjustments” is broader than the use of denormalized numbers.

SAP contends that Versata restricted the term “pricing adjustment” to denormalized numbers. Pet., 14 and 16. Versata agrees. POPR, 26 n. 3.

SAP identifies the following language from the ’350 patent as evidence of Versata’s alleged disclaimer for the term pricing adjustment:

The combination of organizational groups and product groups hierarchies and the denormalized pricing table relating a particular organization (or an entire organizational group) to a particular product (or an entire product group) result in some of the advantages of the present invention over the prior art pricing systems.

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Pet., 14, SX 1001, 3:65-4:4. The quoted language however does not restrict pricing adjustments to denormalized numbers but instead is consistent with the proposition that denormalized numbers represent a preferred embodiment of Versata's invention. Other citations provided by SAP likewise do not evidence that Versata sought to be its own lexicographer or disclaim a broader definition for the term "pricing adjustment." Further evidence that Versata did not intentionally seek to disclaim the broader construction may be found in the district court proceeding where Versata argued that the claims are not so limited and that "denormalized" constitutes a preferred embodiment. SX 1012, 7-9.

We hold that the plain language of the claims creates a rebuttable presumption that the term "pricing adjustment" encompasses, but is not limited to, "denormalized pricing adjustments." Further, we hold that the parties have failed to rebut this presumption such as by providing evidence demonstrating that Versata acted as its own lexicographer or that Versata disavowed the broader construction. Accordingly, we hold that pricing adjustment means simply a price modification. *In re Bigio*, 381 F.3d 1320, 1325-26 (Fed. Cir. 2004) ("Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition.").

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4. Pricing Information

SAP states that the broadest reasonable interpretation of the term “pricing information” should include denormalized numbers. Pet., 16. SAP further states that the term “pricing information” means “any information relating to price other than an adjustment to price that is not a denormalized number.” *Id.* Versata agrees and states that all the challenged claims require denormalized numbers and that denormalized numbers are determined at run time. POPR, 26-27, n. 3 and 4.

The plain and ordinary meaning of the term pricing information is not restricted to denormalized numbers. Further, the claims themselves do not place such a limitation on the term. As recognized by Versata in the related litigation, the term “pricing information” in dependent claims 6 and 24 encompasses both price adjustments and denormalized price adjustments. SX 1012, 10. To interpret the term “pricing information” as restricted to denormalized pricing adjustments would make the term denormalized superfluous in claims 6 and 24. We hold that there is a rebuttable presumption that the term pricing information is not restricted to the use of denormalized numbers.

SAP relies upon the testimony of Dr. Siegel to support its construction of the term pricing information. Pet., 15. Dr. Siegel agrees with the district court’s interpretation of the ‘350 patent that the patent owner limited its invention to

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denormalized numbers. SX 1005, ¶ 103. Dr. Siegel directs the Board's attention to various passages in the '350 patent that allegedly limit the invention to denormalized numbers. *Id.*, ¶ 100. The cited passages however, contain statements such as "Fig. 5 is an example of the inventions denormalized table," "[o]ne aspect of the invention is now explained by referring to FIG 5 and comparing the invention with prior art systems for generation of pricing recommendations," "[s]till referring to FIG 5," "the prior art systems do not use denormalized price tables." Although the cited passages highlight the benefits of using denormalized numbers in combination with organizational and product groups hierarchies, they do not literally disavow the broader construction of the term pricing information or "repeatedly, consistently, and exclusively" seek to confine pricing information to denormalized numbers. *Cf., In re Abbott Diabetes*, Nos. 2011-1516, 1517, 2012 WL 4465236 (Fed. Cir. September 28, 2012) (plain language of claim and specification consistently demonstrated absence of external wires).

Although the doctrine of claim differentiation creates only a rebuttable presumption, SAP has failed to provide sufficient intrinsic evidence to overcome this presumption and justify its narrow construction. *Thorner v. Sony Computer Entm't America*, 669 F.3d at 1365 ("It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do

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not read limitations from the specification into claims; we do not redefine words.

Only the patentee can do that.”). We agree with the position advanced by patent owner Versata in the district court litigation and hold that denormalized numbers represent a preferred embodiment of the invention. We further hold that the term pricing information means information related to pricing and comprises both price adjustments and denormalized price adjustments. SX 1012, 10.

Versata, to the extent it disagrees with the claim constructions provided, may seek to file a motion to amend during the review and propose substitute claims that state with precision the claim scope it so desires. 35 U.S.C. § 326(a)(9) and (d).

B. SAP Has Standing to File a Petition for a Covered Business Method Review of Versata’s ’350 Patent

The parties disagree as to whether SAP has standing to file a petition for a covered business method review of the ’350 patent. Pet., 3-10, and POPR, 10-45 and 61-68.

Section 18 of the AIA provides for the creation of a transitional program for covered business method reviews. Section 18 limits reviews to persons or their privies that have been sued or charged with infringement, of a covered business method patent where covered business method patents do not include patents for technological inventions. AIA, §§ 18(a)(1)(B) and 18(d)(1).

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1. SAP Has Been Sued for Infringement of the '350 Patent

SAP represents that it has been sued for infringement of the '350 patent in *Versata Software Inc. v. SAP America Inc.*, No. 2:07-cv-153 (E.D. Tex). Pet. 9-10. Versata acknowledges that SAP was sued for infringement but contends that the related litigation has progressed beyond the point where the statute contemplated it would be employed. POPR, 62.

Versata represents that “sued for infringement” should be interpreted as requiring ongoing litigation and that while SAP was sued for infringement, there will be no further proceedings in the district court on the issue of validity. POPR, 62. Versata acknowledges, however, that it is unaware of any legislative history relating to this question. *Id.* We give § 18(a)(1)(B) its literal meaning and conclude that a party sued for infringement of a patent, and not otherwise estopped from challenging validity, may file a petition for a transitional proceeding with respect to a covered business method patent. 37 C.F.R. 42.302 (party that has been sued for infringement and not otherwise estopped may file a petition).

Versata contends that SAP should be precluded from pursuing its challenge under the principles of issue and claim preclusion. POPR, 63-68. We disagree.

37 C.F.R. 42.302 generally provides that a party may not file a petition for a covered business method review unless the party has been sued for infringement or

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charged with infringement under that patent and that the petitioner must not otherwise be estopped from challenging the claims. As recognized by Versata, estoppel may arise from claim preclusion and issue preclusion. Claim preclusion requires a final judgment on the merits of the first suit. *Bowers Inv. Co. v. United States*, 695 F.3d 1380, 1384 (Fed. Cir. 2012) (citing *Ammex, Inc. v United States*, 334 F.3d 1052, 1055 (Fed. Cir. 2003)). Similarly, issue preclusion requires that the party against whom preclusion will apply had a full and fair opportunity to litigate the issue in the first action. *In re Freeman*, 30 F.3d 1459, 1465 (Fed. Cir. 1994). For a judgment to be “final” for purposes of preclusion before the Board, the decision needs to be immune, as a practical matter, to reversal or amendment. See, e.g., *Vardon Golf Co., Inc. v. Karsten Mfg. Corp.*, 294 F.3d 1330, 1333 (Fed. Cir. 2002) (citing *Miller Brewing Co. v. Jos. Schlitz Brewing Co.*, 605 F.2d 990, 996 (7th Cir. 1979)). As the final judgment in the related *Versata v. SAP* litigation is currently on appeal to the Federal Circuit, we hold that the district court’s judgment is not sufficiently firm to be accorded conclusive effect for purposes of 37 C.F.R. 42.302 as it is still subject to reversal or amendment.

Versata states that the validity of the ’350 patent has been finally adjudicated and even if the ’350 patent were held unpatentable in this proceeding, that determination would have no effect on the judgment in the litigation and thus, “the lawsuit is over for purposes of 37 C.F.R. 42.302.” POPR, 62-63.

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As stated above, we hold that the district court's judgment is not sufficiently firm to be accorded conclusive effect for purposes of estoppel under 37 C.F.R. 42.302. Additionally, Versata has failed to establish on this record that a determination of unpatentability would have no effect on the related litigation.⁷

We hold that SAP has been sued for infringement for purposes of AIA § 18(a)(1)(B) and 37 C.F.R. 42.302.

2. Versata Claims 17 and 26-29 are Directed to Financial Products or Services

SAP and Versata disagree as to whether the '350 patent is directed to a covered business method. Pet., 4-5 and POPR, 31-45. According to SAP, the '350 patent is a covered business method patent as it claims methods and corresponding apparatus for determining a price, and relates to management of pricing data and is

⁷ *In re Translogic Technology Inc.*, 504 F.3d 1249 (Fed. Cir. 2007) arose out of a reexamination proceeding whose patent was the subject of a related patent infringement litigation between *Translogic* and Hitachi. In *Translogic*, the Board upheld a rejection of the patent claims and an appeal was taken to the Federal Circuit. 504 F.3d at 1251. In the related district court litigation a jury found that Hitachi had induced infringement and held Hitachi liable for \$86.5 million in damages. *Id.* After post-trial briefing, the district court entered final judgment and Hitachi appealed to the Federal Circuit. *Id.* On appeal from the Board's unpatentability determination, the Federal Circuit upheld the decision of the Board and held *Translogic*'s claims unpatentable. *Id.* 1262. That same day, the Federal Circuit vacated the district court's judgment and remanded the case to the district court for dismissal. *Translogic Tech., Inc. v. Hitachi, Ltd.*, 250 Fed. Appx. 988 (Fed. Cir. 2007).

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classified in class 705. Pet. 5. Versata takes the position that the broadest reasonable definition of financial services or products would exclude its claimed invention. POPR, 32.

The AIA defines covered business method patents as:

(1) IN GENERAL.—For purposes of this section, the term “covered business method patent” means a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a *financial product or service*, except that the term does not include patents for technological inventions.

AIA, § 18(d)(1).

The Office published notices of proposed and final rulemaking seeking to implement Section 18. The notice of proposed rulemaking solicited public comment, and fully considered and responded to comments received. 37 C.F.R. 42.301(a) was among the rules proposed and finalized by the notices. 37 C.F.R. 42.301(a) tracks the language of AIA § 18(d)(1) and was subject to comment and response as to its interpretation. In considering public comments, the Office stated that it would consider legislative intent and history behind the definition and the transitional program itself. 77 Fed. Reg. 157 (August 14, 2012) 48734, 48735.

The Office stated that the legislative history explained that the definition of covered business method patents supported the notion that the definition be broadly interpreted and encompass patents claiming activities that are financial in

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nature, incidental to a financial activity or complementary to a financial activity.

Id. The Office also stated that it did not adopt the suggestion that the term financial product or service be limited to the products or services of the financial services industry as it ran contrary to the intent behind § 18(d)(1). *Id.* at 48736.

Versata raises a number of issues as to why its method and apparatus for pricing would not be considered a financial product or service. We do not find them persuasive.

Versata cites definitions from a variety of sources including the Dodd-Frank Wall Street Reform and Consumer Protection Act, the Bank Holding Company Act of 1956, as well as North American Industry Classification Codes. POPR, 32-37. Versata's proposed definitions are inconsistent with the legislative history of Section 18 and the final rules. For example, Versata relies upon an FTC definition of "financial product or service" as directed to products or services that a financial holding company could offer. The suggestion to adopt a definition limiting financial services or products to a particular industry, financial services industry, was considered but not adopted during rulemaking as such a narrow construction would be contrary to the legislative history of Section 18. 77 Fed. Reg. 157, 48736.

Versata contends that there is nothing in the claims indicating that they are related to a financial service or product. POPR, 37 – 42. Versata alleges that

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financial products or services are not mentioned anywhere in the claims or specification, rather, the claims are directed to product/service pricing. We do not interpret the statute as requiring the literal recitation of the terms financial products or services. The term financial is an adjective that simply means relating to monetary matters. This definition is consistent with the legislative history for Section 18, which explains that the definition was intended to encompass patents claiming activities incidental and complementary to a financial activity.⁸ We hold that Versata's '350 patent claims methods and products for determining a price and that these claims, which are complementary to a financial activity and relate to monetary matters, are considered financial products and services under § 18(d)(1).

⁸ The legislative history also provides that:

The plain meaning of “financial product or service” demonstrates that section 18 is not limited to the financial services industry. At its most basic, a financial product is an agreement between two parties stipulating movements of money or other consideration now or in the future.

Rather, because the patents apply to administration of a business transactions, such as financial transactions, they are eligible for review under this section. To meet this requirement, the patent need not recite specific financial product[s] or service[s].

157 Cong. Rec. S5432 (daily ed. Sept. 8 2011)(statement of Sen. Schumer).

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Versata further contends that Senator Schumer's comments appearing in the legislative history cannot change the express language of the statute. We agree. Legislative history cannot cloud statutory text that is clear. Yet, in the case before us, the plain language of § 18(d)(1) is consistent with the legislative history and Senator Schumer's commentary.⁹

3. Versata Claim 17 is Not Directed to a Technological Invention

A petitioner in a covered business method proceeding must demonstrate that the patent for which review is sought is a covered business method patent. 37 C.F.R. § 42.304(a). Covered business method patents by definition do not include patents for technological inventions. AIA § 18(d)(1) (excludes patents for technological inventions from the definition of covered business method patents).

The AIA required the Office to assist in the implementation of the covered business method review by promulgating “regulations for determining whether a patent is for a technological invention.” AIA, § 18(d)(2). Consistent with the statute, the Office published a notice of proposed rulemaking and requested written comments on the Office’s proposed technological invention regulation, 37 C.F.R. 42.301, and also published a practice guide advising the public on the Office’s

⁹ This is not surprising as Senator Schumer was the principal author of Section 18 of the AIA, along with his colleague Senator Kyl.

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proposed rules, including the proposed technological invention regulation. The Office received written comments, and after analyzing the comments thoroughly, the Office published a notice of final rules on the definition of covered business method patents and technological inventions. 77 Fed. Reg. 157 (August 14, 2012) 48734. The final rules provide the following definition of technological invention to assist in the determination of whether a patent is for a technological invention:

(b) Technological invention. In determining whether a patent is for a technological invention solely for purposes of the Transitional Program for Covered Business Methods (section 42.301(a)), the following will be considered on a case-by-case basis: *whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.*

37 C.F.R. 42.301(b) (emphasis added). To help the public understand how the rule would be applied in practice, the Office provides the following guidance as to claim drafting techniques that would not typically render a patent a technological invention under 37 C.F.R. 42.301(b):

(a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.

(b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.

(c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

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77 Fed. Reg. 157 (August 14, 2012) at 48763-48764.

SAP contends that the '350 patent does not claim a technological feature that is novel and unobvious over the prior art. Versata disagrees stating that SAP has failed to address the subject matter of the challenged claims as a whole. POPR, 15.

We agree with Versata that we are to address the subject matter of the claims as a whole. As the presence of a single claim is sufficient to institute a covered business method review, we exercise our discretion and begin our analysis with Versata claim 17.

SAP states that claim 17 lacks a novel and unobvious technological feature as it is merely directed to a business process of determining product prices that lacks even minimal computer-related recitations. Pet., 9. Versata states that the novel and unobvious technological feature recited by each of its claims is its hierarchical data structure used in combination with a software-implemented pricing procedure. POPR, 16. As stated by Versata:

As shown by the express language of the challenged claims and the detailed discussion of the novel and unobvious features of the claimed invention, the '350 patent discloses and claims a *software invention*. The novel and unobvious features are all about creating a hierarchical data structure to enable a hierarchical arrangement of organizational groups and product groups stored in a data source and software implementing a pricing procedure that performs hierarchical accesses to the hierarchical arrangements of organizational and product data to retrieve pricing information adjusted using denormalized numbers to determine a product price.

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POPR, 24-25, emphasis in original.

Claim 17 lacks a novel and unobvious technological feature. Claim 17 is directed to a method of determining a price. The claim arranges organizational and product groups using hierarchies (a classification system), hierarchies which were acknowledged to be “ubiquitous customer and product hierarchies” already used by companies to organize pricing information. SX 1011, p. 5. The pricing information is stored in a data source, which on its face encompasses a record keeping book. The information is retrieved and sorted according to the pricing types, product and purchasing organization. The less restrictive pricing information is eliminated, i.e., the least applicable pricing information is not used, and the price is determined. None of these claim limitations, taken alone or in combination, rises to the level of a technological feature as the claimed method steps could be performed by one of ordinary skill in the art with pencil and paper.

Versata states that each of its claims, including claim 17, requires the use of a computer, denormalized numbers and further that the denormalized numbers are to be determined at “run time.” POPR 24-26. Even assuming that each of these limitations was read into claim 17, they would still fail to demonstrate that claim 17 taken as a whole possessed a novel and unobvious technological feature. As to the required use of a computer and software, the ’350 patent states that its invention may be implemented in any type of computer system or programming or

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processing environment. SX 1001, 5:55-58. Accordingly, no specific, unconventional software, computer equipment, tools or processing capabilities are required. *Dealertrack v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012) (term “computer aided” did not impose meaningful limit on scope of the claims as “[t]he claims are silent as to how the computer aids the method, the extent to which a computer aids the method, or the significance of a computer to the performance of the method.”). We hold that Versata claim 17 lacks a novel and unobvious technological feature.

Additionally, claim 17 does not solve a technical problem using a technical solution. According to the ’350 patent, prior art pricing tables overcomes the prior art’s disadvantages in storing, maintaining and retrieving large amounts of data. SX 1001, 6:1-7. Claim 17 allegedly overcomes this problem by reorganizing the data into customer and product hierarchies. According to Versata, the inventor “leveraged the hierachal data structures used by large companies to organize pricing information.” SX 1011, 5. Versata refers to the customer and product hierarchies as “ubiquitous.” *Id.* Organizing data into hierarchies however, is not a technical solution as this is akin to creating organizational management charts. SX 1005, ¶ 47.

We hold that Versata’s ’350 patent is a covered business method patent.

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C. Versata Claims 17 and 26-29 are Unpatentable Under 35 U.S.C. § 101

SAP challenges claims 17 and 26-29 as unpatentable under 35 U.S.C. § 101

stating that the claims are directed to an unpatentable abstract idea. Pet., 16.

Versata disagrees and maintains that its claims are directed to a technological invention. POPR, 80.

1. § 101 Subject Matter Eligibility

The Supreme Court has made it clear that the test for patent eligibility under § 101 is not amenable to bright-line categorical rules. *Bilski v. Kappos*, 130 S. Ct. 3218 (2010) and *Mayo Collaborative Servs. v. Prometheus Lab., Inc.* 132 S. Ct. 1289 (2012). For example, the fact that a claim recites a method that is implemented on a computer or is directed to a computer-readable medium that causes a computer to implement certain steps are not per-se indicators of patent eligibility. Rather, a challenged claim, properly construed, must incorporate enough meaningful limitations to ensure that it claims more than just an abstract idea and not just a mere “drafting effort designed to monopolize [an abstract idea] itself.” *Mayo*, 132 S. Ct. at 1297. To be meaningful, the claim must contain more than mere field-of-use limitations, tangential references to technology, insignificant pre- or post-solution activity, ancillary data-gathering steps, or the like. Thus, claims that recite a method of doing business on a computer and do no

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more than merely recite the use of the computer for its ordinary function of performing repetitive calculations are not patent eligible. *Bancorp Servs., LLC v. Sun Life Assurance Co.*, 687 F.3d 1266, 1278-79 (Fed. Cir. 2012) (computer used only for its most basic function, the performance of repetitive calculations does not impose a meaningful claim limitation). Thus, we analyze a claim to determine whether the claim embodies a specific, practical application of an abstract idea, or merely nothing more than the abstract idea itself.

2. Versata's Challenged Claims 17 and 26-29 are Unpatentably Abstract

Versata's claims are directed to a method for determining a price, a computer readable storage media comprising instructions for a method of determining a price, as well as a computer implemented method for determining a price. The claims employ customer and product hierarchies to arrange data for retrieval and processing. As Versata has explained in its brief to the Federal Circuit, the use of hierachal data structures to organize pricing information was already used by large companies and Versata's invention represented these "ubiquitous customer and product hierarchies within the pricing tables themselves." SX 1011, 5. The concept of arranging customer and product data into hierarchies is an unpatentable abstract idea, just like the basic hedging concept at issue in *Bilski*.

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Versata contends that its claims are patent eligible for the same reasons its claims represent a technological invention and that the petition is incorrect in stating that Versata's claims fail the machine or transformation test. POPR, 80. We recognize that Versata's claims require the manipulation and reorganization of data on a computer, but the mere manipulation and reorganization of data does not satisfy the transformation prong of the machine or transformation test. Further, claims directed to software implementation of a mental process that could otherwise be performed without the use of a computer, such as a method for determining a price, does not satisfy the machine prong of the machine or transformation test. *CyberSource Corp. v. Retail Decisions, Inc.* 654 F.3d 1366, 1375 (Fed. Cir. 2011).

We recognize that the machine or transformation test is not the exclusive test to determine patent eligibility. We hold however that Versata's claims do not incorporate sufficient meaningful limitations to ensure that the claims are more than just an abstract idea. Although Versata's challenged claims recite such limitations such as computer readable media comprising instructions (claim 26), a processor (claim 29), memory coupled to the processor (claim 29), and computer program instructions (claim 29), such generic descriptions are not tied to a particular computer but rather merely require the use of a general purpose computer and programming and processing environment. Further, even if we were

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to limit the claims to denormalized numbers calculated at runtime, such calculations may also be performed on the general purpose computer, or even by a person seeking to determine the price using the hierarchies recited in the claimed method. SX 1001, 5:55-58. We conclude that SAP has established that Versata's challenged claims are more likely than not unpatentable under 35 U.S.C. § 101.

3. 35 U.S.C. § 101 is a Permissible Grounds for Challenging Claims in a Covered Business Method Review

Versata contends that the USPTO may not consider patent subject matter eligibility challenges under § 101 as part of the covered business method review. POPR, 68. According to Versata, the grounds for challenging patents during the review do not encompass § 101. Specifically, Versata states that the statute and controlling precedent lead to the conclusion that the USPTO may not consider such challenges during a review. *Id.*, 68-80. We disagree.

Under the AIA, any ground that could be raised under 35 U.S.C. § 282(b)(2) or (3) can be raised in a post-grant review or (with exceptions not relevant here) in a covered business method review. The grounds under § 282(b)(2) and (3) are:

- (2) Invalidity of the patent or any claim in suit on any ground specified in part II as a condition for patentability.
 - (3) Invalidity of the patent or any claim in suit for failure to comply with—(A) any requirement of section 112, except that the failure to disclose the best mode shall not be a basis on which any claim of a

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patent may be canceled or held invalid or otherwise unenforceable; or
(B) any requirement of section 251.

As recognized by the Supreme Court, § 101 is a condition for patentability.

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 12 (1966), the Supreme Court stated that the 1952 Patent Act “sets out the conditions of patentability in three sections,” citing 35 U.S.C. §§ 101, 102, and 103. The Supreme Court has also addressed invalidity under § 101 when it was raised as a defense to an infringement claim under § 282. *See Mayo Collab. Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. at.

The Federal Circuit has also recognized that §101 is a condition for patentability that can be raised as an affirmative defense under 35 U.S.C. § 282(b)(2). For example, in *Dealertrack*, the majority rejected the dissent’s contention that §101 is not a “condition for patentability,” stating that “the ‘defenses provided in the statute’ § 282, include not only the conditions of patentability in §§ 102 and 103, but also those in § 101.” *Dealertrack*, 674 F.3d at 1330, n. 3 citing *Aristocrat Techs. Austl. PTY Ltd. v. Int’l Game Tech.*, 543 F.3d 657, 661 (Fed. Cir. 2008) (“It has long been understood that the Patent Act sets out the conditions for patentability in three sections: sections 101, 102, and 103.”).

The legislative history of the AIA also makes it clear that Congress intended the Office to consider challenges brought under § 101 for post-grant reviews. For example, with certain exceptions not relevant here, the covered business method

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review program employs the same standards and procedures as the post grant review program. AIA, § 18(a)(1). The covered business method review program was added to the AIA via a manager's amendment in the Senate. 157 Cong. Rec. S1363 (daily ed. Mar. 8, 2011) (discussing the Schumer-Kyl program included in the manager's amendment adopted March 1). The specified purpose of the covered business method review program was to allow the Office to revisit business method patents post-*Bilski* and evaluate whether the patents were too abstract to be patentable under § 101. This was explained in the "Summary of the Manager's Amendment," which states:

The Schumer-Kyl business-methods proceeding, as modified to accommodate industry concerns and PTO needs. In its 1998 State Street decision, the Federal Circuit greatly broadened the patenting of business methods. Recent court decisions, culminating in last year's Supreme Court decision in *Bilski v. Kappos*, have sharply pulled back on the patenting of business methods, emphasizing that these "inventions" are too abstract to be patentable. In the intervening years, however, PTO was forced to issue a large number of business-method patents, many or possibly all of which are no longer valid. The Schumer proceeding offers a relatively cheap alternative to civil litigation for challenging these patents, and will reduce the burden on the courts of dealing with the backwash of invalid business-method patents.

157 Cong. Rec. S1367 (daily ed. Mar. 8, 2011). Senator Kyl, a primary author of the covered business method review program, confirmed this understanding stating that "section 101 invention issues" are among those that can be raised in post grant reviews. 157 Cong. Rec. S1375 (daily ed. Mar. 8, 2011).

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Both houses of Congress and the executive branch of government all agree - § 101 can be raised in post grant reviews and by consequence, in covered business method reviews.¹⁰

We have reviewed Versata's contentions and citations to the contrary but do not find them persuasive. For example, Versata contends that "in *Diamond v. Diehr*, the Supreme Court concluded that subject matter eligibility under § 101 is not a condition for patentability" and provided the following quotation from the case:

Section 101, however, is a general statement of the type of subject matter that is eligible for patent protection "subject to the conditions and requirements of this title." Specific conditions for patentability follow and § 102 covers in detail the conditions relating to novelty. The question therefore of whether a particular invention is novel is "wholly apart from whether the invention falls into a category of statutory subject matter."

POPR, 70-71, *Diamond v. Diehr*, 450 U.S. 175, 189-190 (1981). The passage cited above is entirely consistent with the proposition that § 101 is a general condition for patent eligibility, i.e., a coarse threshold filter, whereas § 102 and §

¹⁰ See the Office's proposed and final rules implementing the AIA, e.g., 77 Fed. Reg. 48,680, 48,684 (Aug. 14, 2012) (The "grounds available for post-grant review include 35 U.S.C. 101 and 112, with the exception of compliance with the best mode requirement."); and, 77 Fed. Reg. 7080, 7088 (Feb. 10, 2012) ("Under the proposed rules, a covered business method patent review petition would be based upon most grounds identified in 35 U.S.C. 321(b), e.g., failure to comply with 35 U.S.C. 101, 102 (based on certain references), 103, and 112 (except best mode)").

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103 represent more specific conditions for patentability. Additionally, Versata states that the Federal Circuit concluded in *MySpace, Inc. v. Graphon Corp.*¹¹ that § 101 is not specified as a condition for patentability. POPR, 71-72. Although *MySpace* does not specifically address the issue in question, it does state that § 101 is an invalidity defense, just as §§ 102, 103 and 112 also represent permissible invalidity defenses. *Id.* at 1261-62.

D. Versata Claims 17 and 26-29 are Unpatentable Under 35 U.S.C. §102

SAP sold an “R/3” business information system designed to manage and account for all of the resources, information and activities of a business. According to SAP, Versata claims 17 and 26-29 are anticipated by SAP’s R/3 documentation, which accompanied its R/3 2.2C product, which shipped in January 1995. Pet., 31, SX 1009. Versata opposes. POPR, 50-56.

The R/3 documentation describes the R/3 system as an enterprise information system that is designed to manage an account for business activities and includes a number of modules covering business functions.¹² A Sales and

¹¹ 672 F.3d 1250 (Fed. Cir. 2012)

¹² The R/3 documentation spans over ten thousand pages. SX 1017. SAP’s expert, Dr. Siegel, has provided a declaration that shows where each element of Versata’s challenged claims may be found in the R/3 document and summarizes this information in an extensive claim chart at Appendix C of his declaration. SX

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Distribution (“SD”) module includes tasks for determining the price at which a sales company will offer a product or service for sale to a customer. The price will depend upon a number of factors, including the relationship with the customer, the size of the order, special offers, packaging, freight, taxes, etc. The R/3 documentation refers to a “condition technique” that is described as a flexible process for accounting for varying factors and considerations in determining a price. The SD module organizes customer organizations and products into hierarchies. For example, customers can be organized by geographic regions (country-state-city) and products can be organized into material pricing groups, such as electrical appliances with subgroups for wet and dry appliances and further subgroups for specific types of wet and dry appliances.

The condition technique employs “condition records.” These records are associated with pricing types, organizational groups and product groups. Hence, the condition technique allows users to store pricing information associated with pricing types, organizational and product groups.

The pricing procedure described in the R/3 documentation involves the use of an “access sequence.” The access sequence specifies the order in which tables should be searched to find applicable condition records.

1005. In analyzing the R/3 documentation, we have relied heavily upon Dr. Siegel’s citations to the record.

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The condition technique sorts pricing information according to pricing types, the purchasing organization, and the hierarchy of product and organizational groups. For example, all condition records are first sorted according to the condition type they belong and then the access sequence determines the order in which the condition records will be retrieved for each type. Once all the condition records are retrieved, the R/3 documentation specifies that all but the last condition record will be eliminated and only the most specific one will be used, i.e., the system will eliminate any of the pricing information that is less restrictive and will determine the product pricing using the sorted information.

Versata contends that the R/3 documentation lacks a material limitation that appears in each of the challenged claims. Specifically, Versata states that there is no dispute that the claim term “pricing information” means “any information relating to price other than an adjustment to price that is not a denormalized number.” POPR, 47. Versata states that all its challenged claims require denormalized numbers and that SAP has failed to establish that the R/3 system employs denormalized numbers.

Our claim construction discussed *supra* is consistent with the construction that Versata advanced at district court, that denormalized numbers represent a preferred embodiment and that the claims are not limited to the use of denormalized numbers. SX 1012, 8-9. Further, SAP’s petition explains that the

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broadest reasonable interpretation of Versata's claims should *include* denormalized numbers. Pet., 16. As stated above, we agree with Versata's position before the district court and we agree with SAP's position before the Board; Versata's claims encompass ("include") denormalized numbers but are not restricted to the use of denormalized numbers.

We credit the testimony of Dr. Siegel and find that the R/3 documentation describes the claimed computer implemented methods for determining a price of a product offered to a purchasing organization. We find that SAP has established that Versata's claims are more likely than not anticipated by the R/3 documentation.

Additionally, although we have construed the claims as not requiring the use of denormalized numbers, we further find that SAP has established on the record filed to date that the R/3 documentation describes the use of denormalized numbers at runtime to arrive at a final price calculation. Specifically, even if the claims required the use of denormalized numbers, Dr. Siegel has provided credible testimony that the R/3 documentation describes a system that uses denormalized numbers at runtime to calculate a final price. SX 1005. In crediting Dr. Siegel's testimony, we agree with Versata that Dr. Boyd, SAP's expert in the related district court litigation, testified that SAP's R/3 2.2 system did not use denormalized numbers. VX 2047, 33:8-20. We also agree with Versata that Dr. Boyd's

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testimony is, on its face, inconsistent with that of Dr. Siegel, SAP's expert for this proceeding. Versata however, does not provide a sufficient explanation as the basis for Dr. Boyd's conclusion that the R/3 prior art system does not employ denormalized numbers. For example, Versata directs our attention to Dr. Boyd's opening expert report as the basis for his opinion but, the opinion merely concludes without much explanation that the R/3 system does not employ denormalized numbers and goes on to state:

Once I learn what Versata's theory regarding denormalized numbers is, I expect I will be able to make more concrete arguments in response. I therefore reserve the right to supplement my report to rebut Versata's infringement theory and, if appropriate, show why its acceptance would have to lead to the "pricing adjustment" and "pricing information" claim limitations being met by prior art R/3.

Opening Expert Report of Dr. E Andrew Boyd, SX 2046, ¶ 246. Based upon the evidence presented, we credit the testimony of Dr. Siegel over that of Dr. Boyd and find that the R/3 system employs denormalized numbers at runtime to calculate a final price.

SAP contends that Versata's challenged claims are unpatentable as anticipated over admitted prior art, including the R/3 system. Pet., 61-62. This ground for challenging Versata's claims is unnecessary as cumulative in light of our decision finding that it is more likely than not that Versata's claims are

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anticipated by the R/3 documentation. Accordingly, we deny this ground for challenging the claims in the trial and it is not authorized as part of the trial.

E. SAP has Failed to Demonstrate that Versata Claims 17 and 26-29 are Unpatentable under 35 U.S.C. § 112

1. § 112, Second Paragraph

SAP alleges that the claims 17 and 26-29 are indefinite because they fail to reasonably apprise those of skill in the art of their scope. Pet. 25. We agree with Versata that SAP has failed to demonstrate that the claims are more likely than not unpatentable under 35 U.S.C. § 112, second paragraph. POPR, 57. Specifically, we hold that the terms “less restrictive” and “pricing information” are definite, and that one skilled in the art could determine the statutory category of invention (article of manufacture) to which claims 26 and 28 belong.

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2. § 112, Written Description

SAP contends that claims 17 and 26-29 lack sufficient written description.

According to SAP, the '350 specification fails to explain how the claimed software operates and thus fails to adequately describe certain functions, for example, "computer instructions to implement the method of claim 17." Pet., 22-23. SAP relies upon the testimony of Dr. Siegel to support its position. *Id.*, citing SX 1005, ¶¶ 62-64.

The test for written description is an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Using this test, the invention must be described in a manner sufficient to demonstrate that the inventor actually invented the claimed invention. *Ariad Pharm. Inc. v. Eli Lilly & Co.*, 598 F.3d 1336 (Fed. Cir. 2010). Using this test, we find that Dr. Siegel's testimony fails to demonstrate that the inventor failed to describe the invention. Specifically, the testimony merely demonstrates that the '350 specification lacks specificity as to the software aspects of the invention, a finding that is consistent with the notion that the claims are directed to an abstract idea as opposed to a software invention.

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IV. Summary

Petitioner has demonstrated that Versata '350 claims 17 and 26-29 are more likely than not unpatentable. The petition is granted as to the following grounds:

I. 35 U.S.C. § 101: Claims 17 and 26-29

II. 35 U.S.C. § 102: Claims 17 and 26-29.

The petition is denied as to the grounds raised under 35 U.S.C. § 112.

V. Order

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is granted as to claims 17 and 26-29 of the '350 patent.

FURTHER ORDERED that pursuant to 35 U.S.C. § 324(a), a covered business method review of the '350 patent is hereby instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 324(d) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

FURTHER ORDERED that the trial is limited to the grounds identified in I-II above and no other grounds are authorized.

FURTHER ORDERED that an initial conference call with the Board is scheduled for 2 PM EST on February 5, 2013. The parties are directed to the Office Trial Practice Guide, 77 Fed. Reg. 48756, 48765-66 (Aug. 14, 2012) for

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guidance in preparing for the initial conference call, and should come prepared to discuss any proposed changes to the Scheduling Order entered herewith and any motions the parties anticipate filing during the trial.

PETITIONER:

Erika.Arner@finnegan.com
CPocketkiklis@oblon.com

PATENT OWNER:

nlinck@rfem.com
VERSATA-PGR@rfem.com

Trials@uspto.gov
571-272-7822

Paper 70
Entered: June 11, 2013

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAP AMERICA, INC.
Petitioner,

v.

VERSATA DEVELOPMENT GROUP, INC.
Patent Owner.

Case CBM2012-00001 (MPT)
Patent 6,553,350

Before SALLY C. MEDLEY, MICHAEL P. TIERNEY, and RAMA G. ELLURU,
Administrative Patent Judges.

TIERNEY, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
37 C.F.R. § 42.73

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SAP filed a petition seeking a covered business method patent review of Versata's 6,553,350 ('350) patent pursuant to section 18 of the Leahy-Smith America Invents Act (AIA).¹ An oral hearing was held on April 17, 2013. This decision is a final written decision under 35 U.S.C. § 328(a) as to the patentability of the challenged claims. Based on the record presented, we hold that Versata's '350 claims 17, and 26-29 are unpatentable under 35 U.S.C. § 101.

I. Background

In 2007, Versata sued SAP for infringement of the '350 patent. The case proceeded to trial and a jury found infringement by SAP and awarded damages. Ex. 2039 (Jury Verdict). The district court denied SAP's post trial motion challenging the infringement verdict, but held a new trial on damages. In the second trial, the jury awarded lost-profits and reasonable royalty damages. The district court upheld those awards. Patent Owner Preliminary Response 7 ("Prel. Resp."), Paper 29.

Both parties appealed the district court's final judgment to the U.S. Court of Appeals for the Federal Circuit on October 11, 2011. *Versata Software, Inc. v. SAP America, Inc.*, Nos. 2012-1029, -1049. Of note, SAP did not appeal the district court's claim construction, and the validity of the '350 patent was not an issue on appeal. Prel. Resp. 8. The Federal Circuit affirmed the jury's infringement verdict and damages award but vacated and remanded a permanent injunction as overbroad. *Versata Software Inc. v. SAP America Inc.*, 106 USPQ2d 1649 (Fed. Cir. 2013).

SAP filed a petition with the United States Patent and Trademark Office ("Office") on September 16, 2012, challenging claims 17 and 26-29 of the

¹ Pub. L. No. 112-29, 125 Stat. 284 (2011).

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'350 patent as unpatentable for failing to comply with 35 U.S.C. §§ 101, 102, and 112, 1st and 2nd paragraphs. Petition ("Pet."), Paper 1. Versata filed a patent owner preliminary response opposing the institution of the review. On January 9, 2013, the Patent Trial and Appeal Board ("Board") granted the petition and instituted the trial proceeding. The Board concluded that SAP demonstrated that claims 17 and 26-29 were more likely than not unpatentable under 35 U.S.C. §§ 101 and 102, but denied the petition as to 35 U.S.C. § 112, 1st and 2nd paragraphs. Decision on Institution of a Covered Business Method Patent Review ("Decision"), Paper 36.

SAP requested that the trial be expedited with respect to the patentability of Versata's claims under 35 U.S.C. § 101. Motion, Paper 40. Versata opposed the request, alleging that bifurcating the § 101 and § 102 issues had the potential to prolong the proceeding and increase costs, contrary to the purposes of the AIA. Opposition, Paper 42. SAP, however, agreed to forgo its challenge on the ground of unpatentability under § 102, if the Board were to enter the requested expedited schedule. Renewed Request, Paper 44. In light of SAP's agreement to forgo the § 102 challenge, the Board granted SAP's request to expedite the trial schedule. Decision Conduct of the Proceeding, Paper 45.

Versata filed a patent owner response to the petition, contending that the challenged claims are patentable under § 101 and that the Board had employed an incorrect claim construction standard in construing the '350 patent claims. Response ("PO Resp."), Paper 51. SAP's reply to the patent owner response maintained that the claims are unpatentable and that the Board had construed the claims properly. "Pet. Reply," Paper 58.

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Both parties requested an oral hearing. *See* 35 U.S.C. § 326(a)(10) and 37 C.F.R. § 42.70(a). A hearing was held on April 17, 2013, a transcript of which appears in the record. Record of Oral Hearing, Paper 66.

II. Versata's '350 Patent²

Versata's '350 patent is directed to a method and apparatus for pricing products and services. Ex. 1001, '350 patent, 3:9-13. The central concept of the '350 patent involves hierarchies and the hierachal arrangement of data. Ex. 1005, ¶ 20.

The '350 patent states that its “invention operates under the paradigm of WHO (the purchasing organization) is buying WHAT (the product).” The '350 patent, 3:24-25. An example of the WHO/WHAT paradigm is depicted in Figure 1 of the '350 patent below:

FIG. 1
PRIOR ART

WHO \ WHAT	486/33 CPU	486/50 CPU	486/66 CPU
WHO			
ADAM	\$40	\$60	\$80
BOB	\$42	\$58	\$72
CHARLIE	\$44	\$68	\$92

² This background section appears also in the Decision, 3-5.

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According to the '350 patent, the WHO/WHAT paradigm was known in the prior art. *Id.*, Fig. 1, 4:16-18. The '350 patent, however, states that prior art pricing tables for WHO/WHAT (customer/products) required large tables of data. *Id.*, 1:52-59.

The '350 patent invention is said to improve upon the prior art and reduce the need for large tables of data by arranging customers into a hierarchy of customer groups and products into a hierarchy of product groups. *Id.*, 3:24-27, 41-42. Specifically, in the '350 patent, WHO is defined by creating an organizational hierarchy of organizational groups, where each group represents a characteristic of the organizational group. *Id.* An example of an arrangement of an organization customer group is depicted below in Fig. 4A of the '350 patent:

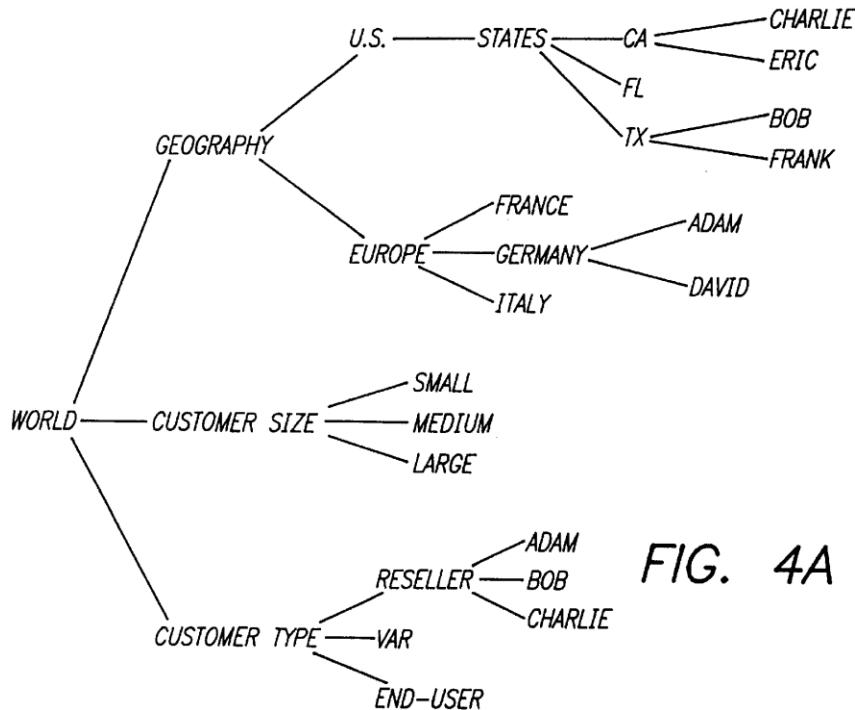


FIG. 4A

Similarly, a product group hierarchy for products (WHAT) is also defined. *Id.*, Fig. 4B, 4:26-28. Pricing information is then associated with the customer and

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product groups. *Id.*, 8:17-25. As such, special pricing adjustments may be defined as applying to all members of a specific customer group or a specific product group. *Id.*, 3:26-49.

III. Analysis

SAP contends that the '350 claims 17 and 26-29 are unpatentable because the claims are abstract and not statutory subject matter for a patent under 35 U.S.C. §101. Pet. 16-21. Specifically, SAP states that Versata's claims are directed to the abstract ideas of arranging customer and product hierarchies and calculating a product price.

Versata contends that the Board should conclude that the '350 claims are not abstract, but instead are patent-eligible under § 101. Versata maintains that each of the claims, considered as a whole, is directed to a specific, practical and advantageous way to determine a product price. PO Resp. 1. According to Versata, both SAP's petition and the Board's Decision on Institution, failed to consider the claims as a whole and address each of their recited limitations, such as storing, retrieving, and sorting. PO Resp. 16-51. Additionally, Versata contends that the Board should not have applied the broadest reasonable interpretation standard for claim construction in this proceeding and, therefore, the Board's claim construction in the Decision instituting trial was in error. PO Resp. 51-67. Versata states that the correct claim construction was that used by the district court, which further supports the patent eligibility of Versata's challenged claims. PO Resp. 61-67.

SAP, as petitioner, bears the ultimate burden of proof that Versata's claims are unpatentable under § 101. To place SAP's and Versata's contentions in context, we begin our analysis by first discussing our construction of the

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challenged claims. *Bancorp Serv., LLC v. Sun Life Assurance Co. of Canada*, 687 F.3d 1266, 1273-74 (Fed. Cir. 2012) (“[I]t will ordinarily be desirable—and often necessary—to resolve claim construction disputes prior to a § 101 analysis, for the determination of patent eligibility requires a full understanding of the basic character of the claimed subject matter.”).

A. Claim Construction: The Broadest Reasonable Interpretation Standard

The Board’s Decision on Institution construed the challenged claims using the broadest reasonable interpretation (“BRI”) standard. Decision 6. SAP contends that the Board’s use of BRI was appropriate under the AIA statutes and rules. Pet. Reply 14-15. Versata disagrees and contends that the Board’s use of such a standard “was in error.” PO Resp. 61.

1. A Century of BRI at the Office

Versata states that claim construction is a question of law and that claim terms should be accorded only one definition: that which is based on a district court interpretation standard. PO Resp. 62. There are, however, two claim construction standards: the Office’s BRI construction and the district court standard set forth in *Phillips v. AWH*.³ The difference in standards generally arises from the ability of an applicant or patent owner in Office proceedings to amend their claims, and the fact that there is no presumption of validity before the Office.⁴ Through the use of the broadest reasonable interpretation standard, the Office is

³ 415 F.3d 1303, 1313 (Fed. Cir. 2005)(en banc).

⁴ Whereas a patent is presumed “valid” unless overcome by clear and convincing evidence before a district court, a petitioner’s burden before the Office is limited to proving “unpatentability” by a preponderance of the evidence. Compare 35 U.S.C. § 282(a) and § 326(e).

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able to encourage inventors to amend their claims to remove uncertainties and over breadth of claim scope.

For at least a century, the Office has encouraged clear and unambiguous claim drafting by utilizing the broadest reasonable interpretation. For example, a 1906 Commissioner of Patent's Decision held that there is no better method of construing claims before the Office. Specifically, this early decision explains the rationale for BRI as follows:

No better method of construing claims is perceived than to give them in each case the broadest interpretation which they will support without straining the language in which they are couched. This method would seemingly give more uniform and satisfactory results than are obtained by methods largely in vogue – such, for example, as that of importing limitations from the specification according to the exigencies of the particular situation in which the claim may stand at a given moment. The method suggested also seems to have the advantage according in its results with the probable intentions of the inventor at the time when the claim is drawn. In presenting claims to the Office the object constantly sought is breadth. Where a limited meaning is intended when a claim is drawn, what possible objection can there be to imposing that meaning unmistakably upon the claim by its express terms? *That a claim which does not carry its true meaning on its face misleads those affected by the patent instead of guiding them to its true scope is alone sufficient reason why the Patent Office should refuse to recognize proposed limitations of claims which have not been clearly expressed therein.*

Podlesak and Podlesak v. McInnerney, 123(2) O.G. 1989, 1990 (Dec. Com. Pat. 1906, emphasis added). This standard of claim construction and its rationale have been upheld consistently by the Federal courts, including both the Court of Customs and Patent Appeals (“CCPA”) and the Federal Circuit. For instance, in 1932, the CCPA stated that:

After a patent has issued, and it no longer is possible for the patentee to control the phraseology of his claims, the courts will so interpret

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them, if possible, as to protect him; but there is no reason, as we many times have observed, why an applicant in the Patent Office should not draw his claims to cover his actual invention only. For this reason, we have uniformly ruled that claims will be given the broadest interpretation of which they reasonably are susceptible. This rule is a reasonable one and tends not only to protect the real invention but to prevent needless litigation after the patent has issued.

In re Horton, 54 F.2d 961, 964-65 (CCPA 1932) quoting *In re Carr*, 297 F. 542, 543-44 (C.A.D.C. 1924); see also, *In re Kebrich*, 201 F.2d 951 954 (CCPA 1953) (stating that consideration of patentability requires use of broadest reasonable interpretation); *In re Prater*, 415 F.2d 1393, 1405-05 (CCPA 1969) (holding that the broadest reasonable interpretation is appropriate where party may amend the claims to obtain protection commensurate with the inventor's actual contribution to the art).

The use of the broadest reasonable interpretation standard applies to pre-issuance as well as post-issuance proceedings before the Office such as reissue and reexamination proceedings. Both the CCPA and the Federal Circuit have recognized that BRI serves an important public interest and that a key factor in its use is that patent owners before the Office are provided an opportunity to amend their claims and obtain appropriate coverage for their inventions with express claim language. See, e.g., *In re Reuter*, 670 F.2d 1015 (CCPA 1981) (holding that broadest reasonable interpretation is applicable in reissue proceedings); *In re Yamamoto*, 740 F.2d 1569 (Fed. Cir. 1984) (holding that broadest reasonable interpretation is applicable in reexamination proceeding).

The new AIA reviews before the Office, like reissue and reexamination proceedings, provide patent owners with an opportunity to amend their claims. See, e.g., 35 U.S.C. § 326(d). Thus, the recognized public interest that supports the

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use of the broadest reasonable interpretation during reissues and reexaminations applies also to the new AIA post grant reviews. Specifically, as the cited authorities recognize, claims serve an important notice function.⁵ The use of the broadest reasonable interpretation encourages patent owners to remove ambiguities and to narrow their claims by amendment, such that the inventor's contribution to the art is expressed in clear, precise and unambiguous terms.⁶ Hence, consistent with the settled expectations of the past century, the Office has extended the use of the broadest reasonable interpretation to the new AIA reviews.

2. The Office's Adoption of BRI

Under the rulemaking authority provided for in the AIA, the Office, through notice and comment rulemaking, adopted the use of the broadest reasonable interpretation for all the new reviews. Thus, in covered business method patent reviews, this claim construction standard is required by 37 C.F.R. § 42.300(b), which reads as follows:

(b) A claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.

Versata contends that the Office, in promulgating this rule, exceeded its rulemaking authority provided for in 35 U.S.C. § 2(b)(2). PO Resp. 62. Versata's contention is unavailing, for it presumes that no other statutory authority exists for

⁵ See also, *White v. Dunbar*, 119 U.S. 47, 51-52 (1886) ("The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.").

⁶ A patent owner may not amend an expired patent. In such situations, the Board will construe the claims by giving more weight to the prosecution history than provided for under the broadest reasonable interpretation standard.

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this standard of claim construction other than the Office's rulemaking authority under 35 U.S.C. § 2(b)(2). As discussed in the following sections, the AIA has provided the Office with new statutory and rulemaking authority, particularly with respect to post grant reviews, including covered business method patent reviews.

See, e.g., Title 35, Chapter 32.⁷

a. Post Grant Rulemaking Authority Under the AIA

To understand the Office's expanded rulemaking authority, it is necessary to explore the evolution of the administrative *inter partes* reexamination process that was previously available for the review of issued patents. As will be seen, this evolution reveals Congress' desire to develop a viable *inter partes* administrative system for patent review coupled with the necessary rulemaking discretion to establish and govern such an administrative system.

Congress established the *inter partes* reexamination as part of the American Inventors Protection Act of 1999 ("AIPA"), Pub. L. 106-113 §§ 4001-4808, 113 Stat. 1536 § 1501A et seq. (1999), (then codified as amended at 35 U.S.C. §§ 311-318, superseded by *inter partes* review, §§ 311-319). *Inter partes* reexamination was created to provide third parties an opportunity to participate in patent challenges before the Office. 145 Cong. Rec. S26983, S26984 (daily ed. Oct. 27, 1999) (statement of Sen. Hatch). The AIPA did not provide rulemaking powers specifically directed to *inter partes* reexamination. Accordingly, in order to regulate the conduct of the *inter partes* reexamination proceedings, the Office issued final rules on December 7, 2000 "under the authority given to the

⁷ For additional views further characterizing the AIA and rulemaking authority under the Act, see Sarah Tran, *Patent Powers*, 25 Harv. J. L. & Tech. 595, 662-73 (2012).

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Commissioner of Patents and Trademarks by 35 U.S.C. 2(b)(2).” Rules to Implement Optional Inter Partes Reexamination Proceedings, 65 Fed. Reg. 76756, 76772 (Dec. 7, 2000).

Prior to the AIA, 35 U.S.C. § 2(b)(2) was said to be the “broadest of the Office’s rulemaking powers.” *Stevens v. Tamai*, 366 F.3d 1325, 1333 (Fed. Cir. 2004) (citing *Gerritsen v. Shirai*, 979 F.2d 1524, 1527 n.3 (Fed. Cir. 1992)). This section provides that the Office may govern the conduct of the proceedings before it. 35 U.S.C. § 2(b)(2)(A). The Federal Circuit has held that “[t]o comply with section 2(b)(2)(A), a Patent Office rule must be ‘procedural’ –i.e., it must ‘govern the conduct of the proceedings in the Office.’” *Cooper Techs. Co. v. Dudas*, 536 F.3d 1330, 1335 (Fed. Cir. 2008). According to the Federal Circuit, a rule is substantive when it “effects a change in existing law or policy” which affects individual rights and obligations. *Id.* at 1336.

Prior to the enactment of the AIA, several attempts were made by Congress to reform patent law. For example, Congress introduced, but failed to pass, the Patent Reform Act of 2007 and the Patent Reform Act of 2009. These acts included a post grant review procedure that included the following rulemaking provision:

§ 326. Conduct of post-grant review proceedings

(a) IN GENERAL.—The Director shall prescribe regulations, in accordance with section 2(b)(2)—

(1) establishing and governing post-grant review proceedings under this chapter and their relationship to other proceedings under this title;

The Patent Reform Act of 2007, S. 1145 110th Cong. (2007) and the Patent Reform Act of 2009, S. 515 111th Cong. (2009). As explained in the Senate Judiciary Committee’s Report on the Patent Reform Act of 2009, while the committee recognized the importance of removing disincentives to current administrative

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processes, the reviews were not to be used as tools for harassment and the Office was to address these potential abuses using its expanded procedural authority. S. Rep. No. 111-18, at 18 (2009). These predecessors of the AIA, however, would have limited the Office's new rulemaking authority to that provided in section 2(b)(2).

With the passage of the AIA, Congress sought to provide a viable alternative to challenging patents in district court litigation,⁸ and therefore, replaced *inter partes* reexamination with new adjudicative review proceedings. As part of this transformation, Congress bestowed new rulemaking authority on the Office to establish and govern the new reviews and the relationship of the reviews to other proceedings under title 35. *See* 35 U.S.C. §§ 316(a)(4) and 326(a)(4). In particular, the section 2(b)(2) restriction that appeared in the 2007 and 2009 bills was removed. As recognized in the AIA legislative history, Congress granted the Office rulemaking discretion to change existing examination policies such that the new review proceedings would be more adjudicative in nature.⁹ This grant of AIA

⁸ See, for example, the Summary of the Manager's Amendment adding section 18 to the AIA, which states:

Recent court decisions, culminating in last year's Supreme Court decision in *Bilski v. Kappos*, have sharply pulled back on the patenting of business methods, emphasizing that these "inventions" are too abstract to be patentable. In the intervening years, however, PTO was forced to issue a large number of business-method patents, many or possibly all of which are no longer valid. The Schumer proceeding offers a relatively cheap alternative to civil litigation for challenging these patents, and will reduce the burden on the courts of dealing with the backwash of invalid business-method patents.

157 Cong. Rec. S1367 (daily ed. Mar. 8, 2011).

⁹ See Senator Kyl's statement that:

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post grant rulemaking authority is consistent with the recognition that the Office's establishment of a viable alternative for challenging patents required further rulemaking discretion than had been provided previously.

While granting the Office broad rulemaking authority, Congress sought to guide the Office's establishment of the new proceedings by providing certain minimum requirements. For example, in establishing the new proceedings the Office was required to promulgate rules setting forth the standards to institute a review, as well as standards and procedures for discovery and motions to amend claims. 35 U.S.C. § 326(a)(2), (5), and (9). Thus, the plain language of the AIA statutes provides the Office with authority exceeding that of merely setting forth "procedures."

As the Supreme Court has observed, "[Congress] does not . . . hide elephants in mouseholes." *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 468 (2001). It is apparent from the plain language of the AIA that Congress has granted the Office new and expanded rulemaking authority to ensure the success of the new reviews.

b. Promulgation of Rule 37 C.F.R. § 42.300(b)

The AIA was enacted into law on September 16, 2011. Pub. L. 112-29, 125 Stat. 284 (2011). Prior to its enactment, then Director Kappos requested that the public provide comments to the Office regarding implementation of the AIA, including the new patent reviews. Numerous comments were filed in response to this request, including comments from intellectual property organizations, law

In the present bill, section 316(a)(4) gives the Office discretion in prescribing regulations governing the new proceeding. The Office has made clear that it will use this discretion to convert inter partes into an adjudicative proceeding.

157 Cong. Rec. S1375 (daily ed. Mar. 8, 2011).

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firms, companies, and individuals.¹⁰

On February 10, 2012, the Office published a notice of proposed rulemaking concerning the Office's implementation of the transitional program for covered business method patent reviews. *See Changes to Implement Transitional Program for Covered Business Method Patents*, 77 Fed. Reg. 7080 (Feb. 10, 2012).¹¹ In this notice, the Office proposed adding 37 C.F.R. § 42.300(b), which is directed to the broadest reasonable interpretation. As explained in the notice:

This proposed rule would be consistent with longstanding established principles of claim construction before the Office. *See, e.g., In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004); *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984).

Id. at 7082. The notice further explains that the patent owner's ability to amend claims to avoid prior art distinguishes the Office proceedings from those of district court's. *Id.* Additionally, the notice identified the relevant statutory authority for the rules as including, among other things, 35 U.S.C. §§ 321-326 and 329. *Id.* at 7094.

The Office received numerous comments on the rules,¹² and on August 14, 2012, the Office issued its final rules. *See, e.g., Changes to Implement Inter Partes Review Proceedings, Post-Grant Review Proceedings, and Transitional Program for Covered Business Method Patents; Final Rule*, 77 Fed. Reg. 48680 (August 14, 2012). The final rules adopted 37 C.F.R. § 42.300(b) as set forth in

¹⁰ http://www.uspto.gov/patents/law/comments/aia_implementation.jsp

¹¹ The Office also provided notices of rulemaking for a consolidated set of rules relating to Board trial practice, specific rules for *inter partes* review, post grant review, derivations, definitions for covered business method patent reviews and a practice guide. *See* 77 Fed. Reg. 48734 (Aug. 14, 2012).

¹² Public comments on the AIA rules may be viewed at:

http://www.uspto.gov/aia_implementation/comments.jsp

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the proposed rule above and identified the statutory basis for the adoption of the rule, how it was supported by the legislative history,¹³ and how the rule was consistent with the settled expectations arising from Federal Circuit precedent where a party is afforded an opportunity to amend claims. *Id.* at 48693. For example, as to the authority for 37 C.F.R. § 42.300(b), the final rules explained how the Office was required to enter final written decisions on patentability, 35 U.S.C. § 328, how the Office was required to set standards for instituting the proceedings and for amending claims, 35 U.S.C. § 326(a)(2) and (9), and that the Office was required to promulgate rules establishing and governing the proceeding and the relationship of the proceeding to other proceedings, 35 U.S.C. § 326(a)(4). *Id.* at 48697-98.

During rulemaking, the Office received comments for and against the adoption of the broadest reasonable interpretation standard.¹⁴ In response to

¹³ Senator Kyl stated:

This [district court] information should help the Office understand and construe the key claims of a patent. It should also allow the Office to identify inconsistent statements made about claim scope--for example, cases where a patent owner successfully advocated a claim scope in district court that is broader than the “broadest reasonable construction” that he now urges in an inter partes review.

157 Cong. Rec. S1375 (daily ed. Mar. 8, 2011)(emphasis added). *See also, San Huan New Materials High Tech, Inc. v. Int'l Trade Comm'n*, 161 F.3d 1347, 1355 (Fed. Cir. 1998) (“The legislative history shows that Congress was fully aware of the agency regulations and practices at the time of legislating in their area, and absent some special circumstance the failure to change or refer to existing practices is reasonably viewed as ratification thereof.”).

¹⁴ *See, e.g.,* Comments of Verizon, *et al.*, at 8 (April 9, 2012)(The Office should “confirm that challenged claims will be given their broadest reasonable construction in light of the specification of the patent in which it appears.”), and Comments of the Pharmaceutical Research and Manufacturers of America at 12

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comments received, the Office explained in the final rules its consideration of the comments and provided detailed reasons for the adoption of the broadest reasonable interpretation standard. *Id.* at 48697-48699. For example, the Office interpreted the requirement to determine patentability as requiring the use of the broadest reasonable interpretation, as opposed to the district court standard of construing to preserve validity. Additionally, the responses to comments noted that, unlike district court adjudicative proceedings, patent owners are afforded an opportunity to amend their claims during the Office reviews. By encouraging patent owners to eliminate ambiguity through amendment, the use of the broadest reasonable interpretation standard encourages clarity in claim language, which serves the important public notice function.

Further, the responses noted that inconsistent results would become a major issue if the Office adopted a standard of claim construction other than the broadest reasonable interpretation for post grant reviews. Specifically, as in the present case where SAP has requested reexamination of the '350 patent in addition to this proceeding, the AIA contemplates that there will be multiple proceedings in the Office, and thus requires the Office to establish rules concerning the relationships between the various proceedings. Major difficulties would arise where the Office is handling multiple proceedings with different claim construction standards, as it could produce confusing results, which would be unhelpful to patentees, applicants, the public, and the system.

Versata's contention that the Office is limited to 35 U.S.C. § 2(b)(2) does not take into account the policy reasons for the use of the broadest reasonable interpretation or the well-settled expectations resulting from decades of case law

(April 10, 2012)(The Office should "adopt a claim construction approach similar to that used by courts.").

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supporting the Office's reliance on the standard to ensure clear and precise claim language.

We have reviewed Versata's other contentions regarding the need to adopt the district court's claim construction, but find them equally unavailing. For example, Versata contends that *stare decisis* requires the Board to apply the district court's claim construction. Pat. Opp., 65. We disagree as appeals from this proceeding are exclusively to the Federal Circuit rather than to district courts. *See also, In re Trans Texas Holdings Corp.*, 498 F.3d 1290, 1295-98 (Fed. Cir. 2007). Versata also contends that the Board is not bound to apply the "BRI standard in every instance" and cites to 37 C.F.R. § 42.5. Pat. Opp., 64-65. While 37 C.F.R. § 42.5(b) allows the Board to waive or suspend a requirement under part 42, the discussion section of the rules make clear that this rule is intended to address procedural requirements, *e.g.*, waiving page limits, to permit the resolution of issues in a uniform and efficient manner. 77 Fed. Reg. 48612, 48616 (Aug. 14, 2012).

Clear, precise and unambiguous claims are as important now as they were a century ago.¹⁵ Clarity in claim scope is of the utmost importance because the claims set forth all to which the patentee is entitled while apprising the public of what is still open to them. *McClain v. Ortmayer*, 141 U.S. 419, 424 (1891); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730 (2002).

¹⁵ See, *e.g.*, Fed. Trade Comm'n, The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition (2011), available at <http://www.ftc.gov/os/2011/03/110307patentreport.pdf> and Comments of the Coalition for Patent Fairness, in response to the Request for Comments on Preparation of Patent Applications, available at: http://www.uspto.gov/patents/law/comments/qualapp-a_patent_coalition_20130415.pdf.

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Accordingly, we agree with SAP and hold that the broadest reasonable interpretation standard is the one correct standard for post grant reviews.

3. Construction of Versata's Claims

The Board's decision to institute identified four claim terms for which construction was sought by the parties: "sorting the pricing information," "the pricing information that is less restrictive," "pricing type(s)," and "pricing information." Decision 7. As discussed in the decision, the terms were given the following meanings:

Decision to Institute - Claim Construction	
Sorting the pricing information	Pricing information is ordered either before or after the information is retrieved. Decision 8-11.
The pricing information that is less restrictive	Information that is less specifically applicable to a product, a purchasing organization, an organizational group or a product group. Decision 11.
Pricing types and pricing adjustments	Class or category of pricing adjustments. Decision 12-14.
Pricing information	Information related to pricing. The definition comprises both price adjustments and denormalized price adjustments. Decision 15-17.

Generally, Versata contends that, to the extent the Board's construction differs from that of the district court, the Board should have applied the district court's claim interpretation as this interpretation was "advocated by both SAP and

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Versata.”¹⁶ PO Resp. 52. SAP, however, contends that Versata’s disagreements with the Board’s constructions are “unfounded.” In particular, SAP states that Versata fails to justify the application of its narrower litigation definitions or to explain how the preferred embodiments of Versata’s specification overrides the Board’s construction based on the doctrine of claim differentiation. Reply 16-17. For this decision, we will construe each of the claim terms identified by the parties in turn.

a. Sorting the Pricing Information

The term “sorting the pricing information” appears only in the following limitation of claim 17 (emphasis added):

sorting the pricing information according to the pricing types, the product, the purchasing organization, the hierarchy of product groups, and the hierarchy of organizational groups;

This step is recited after a “retrieving pricing information” step, but before an “eliminating less restrictive pricing information” step.

The Board’s decision to institute adopted the district court’s construction of the term “sorting the pricing information.” Decision 8-9. Neither party disputes this construction. The parties, however, disagree as to when the pricing information is sorted. Decision 9, PO Resp. 52-61 and Reply 16-17.

In instituting the review, the Board held that the plain language of claim 17 did not require that the information be retrieved first and sorted. This was in contrast to Versata claim 1, which requires “sorting the retrieved information.”

¹⁶ Versata’s opposition omits the fact that it urged the district court not to construe the claims as limited to preferred embodiments, a construction that it now seeks the Board to adopt. Decision 14 (citing District Court Memorandum Opinion and Order Regarding Claim Construction, *Versata v. SAP*, No. 07-cv-00153, slip op. at 7-9) (May 19, 2009) (Ex. 1012).

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Further, the Board credited the testimony of SAP's expert,¹⁷ Dr. Siegel, who testified that sorting the pricing information in the context of the '350 patent encompassed sorting either before or after the information is retrieved. Decision 9-11.

Versata contends that claim 17 requires "sorting" after "retrieving." PO Resp. 52-61. According to Versata, the intrinsic and extrinsic record demonstrates that a person of ordinary skill in the art would have understood that "the pricing information" referred to in the sorting step of claim 17 pertains to the "retrieved applicable pricing information." PO Resp. 53. Versata states that "any other interpretation would not be reasonable," as it is "generally the case that data stored in a data source must be retrieved from the data source *before* the data can be sorted." *Id.* at 53-54. Versata relies upon the testimony of its expert, Dr. Liebich, to support its construction. PO Resp. 53-54 (citing Ex. 2091, ¶¶ 123-128).

We agree with SAP that claim 17 does not itself impose a temporal limitation on when the pricing information is sorted. As SAP contends, Versata's arguments and expert testimony as to what is "generally" the case do not demonstrate that Versata sought to limit claim 17 in the way that claim 1 expressly was limited. *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1314 (Fed. Cir. 2003) (holding that similar language did not require separate and consecutive performance of various steps).

Versata contends that the specification demonstrates that sorting must occur after retrieval. PO Resp. 55-57. We agree with Versata that Figure 15B of the '350 patent describes the use of the method where the sorting step occurs after

¹⁷ The field of the invention is computerized financial systems. *See, e.g.*, Ex. 1005, ¶ 16. A person of ordinary skill in the art would have at least a bachelor's degree in computer science and experience developing computerized financial systems. *Id.*, ¶ 18.

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retrieving all pricing adjustments. *Id.*, and Ex. 1001, Fig. 15b, 4:62, 18:53-54 and 19:4-43. Yet, the '350 patent states explicitly that numerous specific details are set forth in the description, but that it would be apparent to one of ordinary skill in the art that the present invention could be practiced without the specific details.

Ex. 1001, 4:67-5:5. SAP's expert, Dr. Siegel, testifies that one of ordinary skill in the art would have understood that claim 17 "does not imply or require a temporal limitation forcing the sorting to occur after the retrieving." Ex. 1005, ¶ 98.

Versata's expert, Dr. Liebich, testifies that "it is **generally** the case that data stored in a data source must first be retrieved from the data source before the data can be sorted." Ex. 2091, ¶ 126 (emphasis added). Based upon the record presented, we find that one of ordinary skill in the art reading the '350 specification would have understood that retrieving then sorting was the preferred, but not the only, method of carrying out the invention. Accordingly, we hold that the '350 patent specification does not require retrieving then sorting.

We are not persuaded by Versata's arguments regarding extrinsic evidential support for its construction of sorting after retrieval. Specifically, the cited district court expert testimony does not dictate that sorting follows retrieving.¹⁸ Ex. 1018, 81-82.

We credit the testimony of SAP's expert, Dr. Siegel, and conclude that claim 17 does not require a temporal limitation forcing the sorting to occur after retrieving.

¹⁸ Versata's patent owner opposition cites to Ex. 2006 and 2064 as support for its proposition. PO Resp. 57-58. The cited portions of the Ex. 2006 trial transcript, however, do not correspond to the testimony of the experts in question. Additionally, the citation to Ex. 2064 trial transcript merely discusses Dr. Boyd's understanding of the Trilogy System and not the '350 patent.

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b. The Pricing Information That Is Less Restrictive

In instituting this review, we adopted the district court's construction that "the pricing information that is less restrictive" means information that is "less specifically applicable to a product, a purchasing organization, an organizational group or a product group." Neither party alleges error in this construction.

c. Pricing Types and Pricing Adjustments and Pricing Information

The Board's decision to institute construed the terms "pricing types" and "pricing adjustments" as meaning a class or category of pricing adjustments. Decision 12-14. The decision further defined the term "information related to pricing" as comprising both price adjustments and denormalized price adjustments. Decision 15-17. The Board's construction differed from that of the district court in that the Board did not limit the claims to denormalized pricing adjustments where denormalized numbers are determined at run time. *Id.*

Versata urged the district court to construe these claim terms broadly and not limit the claims to preferred embodiments but, before this panel, urges that the district court's narrow construction be adopted. PO Resp. 61-65. SAP contends that the Board's construction was correct and that Versata has failed to justify application of the narrower litigation definition under BRI, or explain how a preferred embodiment could override the Board's construction based on claim differentiation. Reply 17. We agree with SAP and, for the reasons provided above, we employ the broadest reasonable interpretation of the claims and adopt the claim constructions for the terms pricing types, pricing adjustments, and pricing information that are set forth in the decision to institute.

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d. Data Source

The term “data source” appears in Versata independent claims 17, 27 and 29. For example, the term data source is used in claim 17 in the following limitation:

storing pricing information in a ***data source***, wherein the pricing information is associated, with (i) a pricing type, (ii) the organizational groups, and (iii) the product groups;

Versata contends that a person of ordinary skill in the art would have understood the term “data source” to mean a conventional or unconventional computer database. PO Resp. 27-28. Versata states that such a construction of the term is consistent with how the term was discussed in the ’350 specification. *Id.* at 28. SAP disagrees, citing the specification’s statement that “although the invention is discussed in terms of a ‘database,’ the invention can be implemented using any data source that may be different from a conventional database.” Reply 7 (citing Ex. 1001, 10:58-61).

We construe the term “data source” in claim 17 as requiring the use of a computer storage medium as the ’350 patent defines the field of the invention as “computer-based” pricing of products. However, even if we are incorrect, it would not alter our § 101 analysis, *i.e.*, the claim is unpatentable whether we adopt Versata or SAP’s construction.

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B. Versata's Claims are Unpatentable Under 35 U.S.C. § 101

SAP challenges claims 17 and 26-29 as unpatentable under 35 U.S.C. § 101 stating that the claims are directed to an unpatentable abstract idea. Pet. 16. Versata disagrees and maintains that its claims are directed to a specific, practical, and advantageous way to determine a product price using hierarchical groups of customers and products. PO Resp. 13-49.

1. § 101 Subject Matter Eligibility

The Supreme Court has made it clear that the test for patent eligibility under § 101 is not amenable to bright-line categorical rules. *Bilski v. Kappos*, 130 S. Ct. 3218 (2010). Further, the Federal Circuit has recognized that it has been especially difficult to apply § 101 properly in the context of computer-implemented inventions. *CLS Bank Int'l V. Alice Corp. Pty. Ltd.*, 106 USPQ2d 1696, 1700 (Fed. Cir. 2013).

Our analysis begins with the statute. There are four broadly stated categories of patent-eligible subject matter: processes, machines, manufactures, and compositions of matter. 35 U.S.C. § 101. In addition, there are three judicially created exceptions to these four categories: laws of nature, natural phenomena, and abstract ideas. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972). A brief review is provided below of the Supreme Court's jurisprudence on § 101 for these exceptions.

An abstract idea or law of nature itself is not patentable. To be patentable, a claim must do more than simply state the law of nature or abstract idea and add the words "apply it." *Mayo Collaboration Servs. v. Prometheus Labs, Inc.*, 132 S. Ct. 1289, 1294 (2012); *Benson*, 409 U.S. at 67. Yet, an application of a law of nature or abstract idea to a known structure or process may be deserving of patent

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protection. *Diamond v. Diehr*, 450 U.S. 175, 187 (1981). The key question is, therefore, whether the claims do significantly more than simply describe the law of nature or abstract idea. *Mayo*, 132 S. Ct. at 1297. A claim is not patent-eligible where it merely recites a law of nature and adds additional steps that merely reflect routine, conventional activity of those who work in the field. *Id.* at 1298. Further, the “prohibition against patenting abstract ideas ‘cannot be circumvented by attempting to limit the use of the formula to a particular technological environment’ or adding ‘insignificant postsolution activity.’” *Bilski*, 130 S. Ct. at 3230 (*quoting Diehr*, 450 U.S. at 191-92).

In *Benson*, the Supreme Court considered a patent application that was directed to the programmed conversion of numerical information in general purpose digital computers. In particular, the Court considered two claims, with one, claim 8 reading as follows:

8. The method of converting signals from binary coded decimal form into binary which comprises the steps of

(1) storing the binary coded decimal signals in a reentrant shift register,

(2) shifting the signals to the right by at least three places, until there is a binary ‘1’ in the second position of said register,

(3) masking out said binary ‘1’ in said second position of said register,

(4) adding a binary ‘1’ to the first position of said register,

(5) shifting the signals to the left by two positions,

(6) adding a ‘1’ to said first position, and

(7) shifting the signals to the right by at least three positions in preparation for a succeeding binary ‘1’ in the second position of said register.

Benson, 409 U.S. at 73-74. The Court in analyzing the claims, noted that a general purpose computer is one that is “designed to perform operations under many different programs.” *Id.* at 65. Although claim 8 recited computer hardware

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(“shift register”), the Court nevertheless determined that the method sought to be patented involved ordinary arithmetic steps that could be performed without the use of a computer or carried out in “existing computers long in use, no new machinery being necessary.” *Id.* at 68. The Court determined that the claims had no substantial practical application except in connection with a digital computer. The Court concluded that the claims sought to “pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.” *Id.* at 71-72. Accordingly, the claims were held unpatentable under § 101.

In *Mayo*, the Supreme Court addressed the law of nature exception in considering claims covering medical diagnostic methods. The Court reaffirmed that patent eligibility should not depend simply on the draftsman’s art, without reference to the principles underlying the prohibition against patents for natural laws and abstract ideas. *Mayo*, 132 S. Ct. 1294 (quoting *Parker v. Flook*, 437 U.S. 584, 593 (1978)). The Court also stated that if a law of nature is not patentable, then neither is a process reciting that law of nature absent additional features demonstrating that the process is “more than a drafting effort designed to monopolize the law of nature itself.” *Id.* at 1297. The Court further recognized that purely “conventional or obvious” limitations are “normally not sufficient to transform an unpatentable law of nature into a patent-eligible application of such a law.” *Id.* at 1298. The Court expressed concern that there is a danger when a patented process amounts to no more than instruction to apply the natural law, or otherwise forecloses more further invention than the underlying discovery could reasonably justify. *Id.* at 1301. The claimed processes in *Mayo* were held unpatentable under § 101 as the Court determined they did not do more than apply the natural law. *Id.* at 1294.

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2. Versata Claims 17 and 26-29 are Unpatentably Abstract

Versata's challenged claims are in substance directed to an apparatus and method for determining a price, *i.e.*, a method of calculating, the method being implemented on computer hardware. Claims 17 and 26-29 are reproduced in the attached Appendix. Generally, claim 17 is directed to a method of determining price, claim 27 is a computer-implemented method of determining a price, and claims 26 and 28 are computer-readable storage media comprising computer instructions to implement the methods of claims 17 and 28. Similarly, while claim 29 is directed to an "apparatus" for determining a price, the apparatus includes computer program instructions capable of performing the same method steps that are recited in claim 27.

SAP contends that Versata's claims are unpatentable under § 101 as they are centered on abstract ideas. Pet. 17. SAP states the abstract nature of the claims is demonstrated by the fact that the method steps can be performed in the human mind or by a human using a pencil and paper. *Id.* at 18. SAP further states that the claims merely recite "abstract ideas with nothing more than 'well-understood, routine, conventional activity' added." *Id.*, citing *Mayo*, 132 S. Ct. at 1294.

Versata disagrees with SAP's characterization of the claims. According to Versata, the claims recite statutory processes and machines under § 101 and the claims do not "preempt" any abstract idea. In particular, Versata states that the determination of whether its claims are directed to patent-eligible subject matter under § 101 requires an analysis of all the elements or steps in the claimed process. *See, e.g.*, PO Resp. 14-15.

We agree with SAP that each of challenged claims involves the use of an abstract idea: determining a price using organizational and product group hierarchies, which are akin to management organizational charts. The concept of

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organizational hierarchies for products and customers is abstract as it represents a “disembodied concept,” a basic building block of human ingenuity. Similarly, determining a price is also abstract as it is essentially a method of calculating. Standing alone, an abstract idea does not represent patent-eligible subject matter. Accordingly, we must further analyze Versata’s claims to determine whether they incorporate sufficient meaningful limitations to ensure that the claims are more than just an abstract idea and not just a mere drafting effort designed to monopolize the abstract idea itself. *Mayo*, 132 S. Ct. at 1297.

a. Versata’s Claims Have No Substantial Practical Application Except in Connection with a Computer

Versata contends that its claims cannot be performed manually or mentally. *See, e.g.*, PO Resp. 33. According to Versata, the claims require the use of a computer because the claims recite computer hardware and the use of computer instructions. *Id.* Yet, claims do not become patentable under § 101 simply for reciting a computer element. *See Benson*, 409 U.S. at 68.

Versata’s expert, Dr. Liebich, testifies that there is no doubt that the claims require implementation on a computer. Ex. 2091, ¶¶ 68, 81, 90, 100, and 103. Dr. Liebich’s testimony is predicated on the fact that the claims recite computer hardware limitations. *Id.* During cross-examination, Dr. Liebich confirmed that the process steps themselves could be performed by pen and paper. Liebich Transcript, Ex. 1033, 119:4 – 143:10, Ex. 1029, and Ex. 1031. Based on the record presented, we conclude that while the challenged claims are drafted to include computer hardware limitations, the underlying process that is implemented on such hardware could also be performed via pen and paper.

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Dr. Liebich testifies that from a practical standpoint the invention “would have no purpose if it were attempted to be performed mentally or with pencil and papers – *i.e.*, outside a computer.” *Id.* at ¶ 69. The mere recitation of computer implementation or hardware in combination with an abstract idea, however, is not itself a significant, meaningful limitation on the scope of the claims. Specifically, as apparent from *Benson*, implementation on a general purpose computer is not a meaningful limitation where there was “no substantial practical application except in connection with a digital computer.” *Benson*, 409 U.S. at 68 and 71-72. Thus, we analyze whether the claimed invention is carried out using existing computers long in use. *Id.*

b. General Purpose Computer Hardware and Programming Are Used to Implement the Claimed Method Steps

The claimed invention of the '350 patent requires only routine computer hardware and programming. The '350 patent states that its invention may be implemented in *any* type of computer system or programming or processing environment. Ex. 1001, 5:55-58; Siegel Dep. Tr. Ex. 2090, 107:12-19. For example, the '350 patent states that the invention's method and apparatus allow prices to be determined on a laptop computer. *Id.* at 3:20-23. Accordingly, the '350 patent makes clear that its contribution to the arts lies not in the type of computing device or processing environment employed. This is consistent with the fact that the '350 specification lacks specificity as to the hardware aspects of the invention. Thus, as with the “shift register” in *Benson*, the recitation of generic general purpose computer hardware (processor, memory, storage) in the challenged claims represents routine, well-understood conventional hardware that fails to narrow the claims relative to the abstract idea. *Benson*, 409 U.S. at 65 (“The

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general-purpose computer is designed to perform operations under many different programs.”).

Next, we look to the claims to determine whether they recite additional meaningful limitations beyond the basic abstract idea of determining a price using customer and product hierarchies on a general purpose computer.

c. Versata’s Claims Merely Add Insignificant, Conventional and Routine Steps that are Implicit in the Abstract Idea Itself

To be patent-eligible a claim reciting an abstract idea must add more than just insignificant, conventional or routine steps to the idea lest the claim effectively cover the abstract idea itself. *Cf., Mayo*, 132 S. Ct. at 1298. Thus, the claims must include meaningful limitations beyond the abstract idea itself.

SAP contends that Versata’s claims do not add anything beyond routine, conventional activities to the unpatentable abstract concepts. Pet. 18. The abstract nature of the claims is said to be confirmed by the fact that the claimed data arrangements and pricing calculations can be performed manually. *Id.*

Versata contends that patent eligibility must be evaluated considering each of the claim elements in combination, and that the challenged claims include specific separate and distinct steps that are not general or abstract in any way. *See, e.g.*, PO Resp., 15. For example, Versata states that SAP has failed “to address the storing, retrieving, sorting, eliminating and determining steps required by claim 17 and their interrelations with one another and with the arranging steps.” *Id.* at 16.

The parties’ experts disagree as to whether the appended steps are merely routine, conventional steps or reflect meaningful limitations. Dr. Siegel, SAP’s expert, testifies that besides the abstract ideas, the claims merely recite routine,

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conventional activities. Ex. 1005, ¶ 49.¹⁹ In contrast, Dr. Liebich, Versata’s expert, testifies that the SAP R/3 pricing technology available at the time of the invention did not practice the combination of steps (storing, retrieving, sorting, eliminating, and determining) recited in the claims. Ex. 2091, ¶ 62. Dr. Liebich further testifies that he was not aware of any pricing technology in the marketplace at that time that performed the combination of steps. *Id.*

Patent eligibility is distinct from the question of whether or not the claims recite subject matter that was not in the marketplace at the time of the invention. *Flook*, 437 U.S. at 593 (“[Section 101] does not involve the familiar issues of novelty and obviousness that routinely arise under §§ 102 and 103.”).²⁰

We agree with SAP that Versata and Dr. Liebich fail to establish that the additional “specific” steps that are appended to the abstract idea provide meaningful limitations. The contention that the combination of the abstract idea and the specific steps represents an improvement in marketplace technology does not demonstrate that the additional steps are anything other than conventional, routine steps that are a consequence of implementing the abstract idea.

Specifically, the Court in *Flook* held that a claim for an “improved” method is

¹⁹ Versata contends that Dr. Siegel failed to address the specific steps recited in claim 17. PO Resp. 17. Dr. Siegel’s cross-examination testimony demonstrates that he considered the specific steps in preparing his declaration. Ex. 2090, e.g., 76:18 – 95:19. Additionally, nowhere does Versata identify specific, credible evidence to demonstrate that Dr. Siegel believed the additional steps to be anything other than conventional, routine steps that would commonly be used to implement the abstract idea.

²⁰ Additionally, although the issue is now withdrawn from consideration, the Board determined that, more likely than not, Versata’s claims lack novelty over the prior art R/3 2.2C product documentation, documentation that Dr. Liebich does not address when concluding that the additional steps were not in “practice.” See, e.g., Decision 39; Ex. 2091, ¶ 62.

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unpatentable where, putting the abstract formula to the side, there was no “inventive concept” in the claimed application of the formula. *Flook*, 437 U.S. at 594-595, n.18.²¹ Accordingly, even if the abstract idea and “specific” steps represent a marketplace improvement, the claims are not patent-eligible where the appended steps lack meaningful limitations that prevent the claim as a whole from covering the practical applications of the abstract idea.

Versata contends that there are many ways to practice the abstract concept of determining a price through arranging customer and product data hierarchies that fall outside the scope of the claims. PO Resp. 26-27. Yet, the fact that the claims could be drafted differently does not demonstrate that the additional limitations are meaningful. *Flook*, 437 U.S. at 590 (“A competent draftsman could attach some form of post-solution activity to almost any mathematical formula . . .”), 593 (allowing determination of patent-eligibility to depend on draftsman’s art would not serve the principles underlying the prohibition against patents for abstract ideas).

We credit the testimony of Dr. Siegel over that of Dr. Liebich and find that the additionally claimed steps of storing, retrieving, sorting, eliminating and receiving are well-known, routine, and conventional steps. *See, e.g.*, Ex. 1005, ¶¶ 44-49, Appendix C. This is consistent with Versata’s acknowledgment that the claims “in fact cover the ‘capability’ to execute a pricing procedure using hierarchical accesses to hierarchical arrangements of customer . . . and product . . . data.” Versata Federal Circuit Appeal Brief, Ex. 1011, 11.

²¹ Versata’s allegation that the claimed invention represents an improvement in the art is not consistent with the evidence of record. The challenged claims are not commensurate with the alleged improvements. For example, while Versata contends that its invention provides technological benefits for database tables and queries, its claims do not require the use of a database. *See* Pet. Reply 5-6.

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We conclude that Versata's claims do not add meaningful limitations beyond the recited abstract idea and, in practical effect, preempt the abstract idea.

IV. Additional Matters

Versata filed a motion to seal Versata exhibit 2086, which is a unredacted copy of Dr. Siegel's deposition. Motion to Seal, Paper 55. Certain portions of Dr. Siegel's deposition include information designated "Confidential-Attorneys' Eyes Only Material" by SAP. We have reviewed exhibit 2086 and agree that good cause exists to grant the motion. 37 C.F.R. § 42.14. Accordingly, Versata exhibit 2086 shall remain sealed in its entirety.

Versata requested that the Board stay the currently pending reexamination of the '350 patent. In light of our final written decision, we decline to stay the reexamination.

V. Conclusion

This is a final written decision of the Board under 35 U.S.C. § 328(a). We hold Versata's claims 17, and 26-29 to be unpatentable under 35 U.S.C. §101. Specifically, the claims recite unpatentable abstract ideas and the claims do not provide enough significant meaningful limitations to transform these abstract ideas into patent-eligible applications of these abstractions.

VI. Order

In consideration of the foregoing, it is hereby:

ORDERED that claims 17 and 26-29 of the '350 patent are CANCELLED as unpatentable;

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FURTHER ORDERED that the Board's determination on claim construction is binding on the patent owner in the reexamination;

FURTHER ORDERED that a copy of this decision is to be placed in the reexamination file; and

FURTHER ORDERED that Versata exhibit 2086 shall remain sealed in its entirety.

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PETITIONER:

Erika Arner
Finnegan, Henderson
Farabow, Garrett & Dunner, LLP
SAP-PGR@finnegan.com

and

J. Steven Baughman
Ropes & Gray, LLP
Steven.baughman@ropesgray.com

PATENT OWNER:

Nancy Linck
Martin Zoltick
Rothwell, Figg, Ernst & Manbeck, PC
nlinck@rfem.com
mzoltick@rfem.com

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Claims Appendix

Versata '350 claims 17, and 26-29 read as follows:

17. A method for determining a price of a product offered to a purchasing organization comprising:

arranging a hierarchy of organizational groups comprising a plurality of branches such that an organizational group below a higher organizational group in each of the branches is a subset of the higher organizational group;

arranging a hierarchy of product groups comprising a plurality of branches such that a product group below a higher product group in each of the branches in a subset of the higher product group;

storing pricing information in a data source, wherein the pricing information is associated, with (i) a pricing type, (ii) the organizational groups, and (iii) the product groups;

retrieving applicable pricing information corresponding to the product, the purchasing organization, each product group above the product group in each branch of the hierarchy of product groups in which the product is a member, and each organizational group above the purchasing organization in each branch of the hierarchy of organizational groups in which the purchasing organization is a member;

sorting the pricing information according to the pricing types, the product, the purchasing organization, the hierarchy of product groups, and the hierarchy of organizational groups;

eliminating any of the pricing information that is less restrictive; and
determining the product price using the sorted pricing information.

26. A computer readable storage media comprising: computer instructions to implement the method of claim 17.

27. A computer implemented method for determining a price of a product offered to a purchasing organization comprising:

retrieving from a data source pricing information that is (i) applicable to the purchasing organization and (ii) from one or more identified organizational groups, within a hierarchy of organizational groups, of which the purchasing organization is a member;

retrieving from the data source pricing information that is (i) applicable to the product and (ii) from one or more identified product groups, within a hierarchy of product groups, of which the product is a member; and

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receiving the price of the product determined using pricing information applicable to the one or more identified organizational groups and the one or more identified product groups according to the hierarchy of product groups and the hierarchy of organizational groups.

28. A computer readable storage media comprising: computer instructions to implement the method of claim 27.

29. An apparatus for determining a price of a product offered to a purchasing organization comprising:

- a processor;
- a memory coupled to the processor,
- wherein the memory includes
- computer program instructions capable of:

retrieving from a data source pricing information that is (i) applicable to the purchasing organization and (ii) from one or more identified organizational groups, within a hierarchy of organizational groups, of which the purchasing organization is a member;

retrieving from the data source pricing information that is (i) applicable to the product and (ii) from one or more identified product groups, within a hierarchy of product groups, of which the product is a member; and

receiving the price of the product determined using pricing information applicable to the one or more identified organizational groups and the one or more identified product groups according to the hierarchy of product groups and the hierarchy of organizational groups.

Trials@uspto.gov

571-272-7822

Paper 81

Entered: September 13, 2013

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAP AMERICA, INC.
Petitioner,

v.

VERSATA DEVELOPMENT GROUP, INC.
Patent Owner.

Case CBM2012-00001
Patent 6,553,350

Before SALLY C. MEDLEY, MICHAEL P. TIERNEY, and RAMA G. ELLURU,
Administrative Patent Judges.

MEDLEY, *Administrative Patent Judge.*

DECISION
Request for Rehearing
37 C.F.R. § 42.71(d)

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I. INTRODUCTION

Versata requests rehearing (Paper 71, Rehearing Req.) of the Final Written Decision (Paper 70, Final Decision) cancelling Versata's claims 17 and 26-29 of U.S. Patent 6,553,350 (the '350 patent) as unpatentable under 35 U.S.C. § 101. Rehearing Req. 1. SAP filed an opposition (Paper 74, Opposition).¹ The request for rehearing is *denied*.

A. Summary of the Final Decision

In the Final Decision, the Board explained that the broadest reasonable interpretation standard is the claim construction standard for post-grant reviews. Final Decision 7-19. The Board construed Versata's claims, applying the broadest reasonable interpretation standard. *Id.* 19-24. The Board held that Versata's claims 17 and 26-29 are unpatentable under 35 U.S.C. § 101. *Id.* 34.

B. Summary of Rehearing Request

According to Versata, the Board misapprehended or overlooked that (1) the '350 patent is not a "covered business method patent"; (2) claim and issue preclusion bar the post-grant review initiated by SAP; (3) 35 U.S.C. § 101 is not a permissible basis for review; (4) the broadest reasonable interpretation standard is not the proper standard for interpreting the claims in the review; (5) even if the broadest reasonable interpretation standard applies, the Board's claim constructions are unreasonable; and (6) claims 17 and 26-29 of the '350 patent recite patent eligible subject matter. Rehearing Req. 1. Versata requests that the Board vacate the Final Decision and/or terminate the proceeding. *Id.* 15.

¹ The Board authorized SAP to file an opposition for the limited purpose of addressing whether two recent Federal Circuit decisions impact the Board's Final Decision. Paper 73.

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II. ANALYSIS

Versata raised issues (1)-(3), *supra*, in its Preliminary Response (Paper 29, Prelim. Resp.). However, Versata did not identify or maintain any of those issues once the trial was instituted. For example, Versata did not raise issues (1)-(3) in its Patent Owner Response (Paper 51, PO Resp.), and both the Board and SAP understood that Versata waived issues (1)-(3). Ex. 2098 at 8:13-9:2. SAP relied on Versata's representation that it waived issues not discussed in Versata's Patent Owner Response. In so doing, SAP did not respond to or address issues (1)-(3) in its Petitioner Reply. Paper 58 at 1 (n. 1), Reply.

A request for rehearing of a final decision is not an opportunity for a party to raise issues that were waived. We find *Georgia Pacific Consumer Products, LP, et al., v. Von Drehle Corporation, et al.*, 710 F.3d 527,533-534 (Fed. Cir. 2013), instructional on the issue, and quote from that opinion here:

Under Rule 8(c)(1) of the Federal Rules of Civil Procedure, the defenses of claim preclusion and issue preclusion are affirmative defenses that must be pleaded. *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found*, 402 U.S. 313, 350 (1971) (citing Fed. R. Civ. P. 8(c)). A party may be held to have waived such preclusion defenses when that party has not properly and timely asserted them. *See Arizona v. California*, 530 U.S. 392, 410 (2000) ("[R]es judicata [is] an affirmative defense [that is] ordinarily lost if not timely raised."); *see also Mun. Resale Serv. Customers v. FERS*, 43 F.3d 1046, 1052 n.4 (6th Cir. 1995) ("Res judicata and collateral estoppel are affirmative defenses which are waived if not timely asserted.").

Even when a preclusion defense is not available at the outset of a case, a party may waive such a defense arising during the course of litigation by waiting too long to assert the defense after it becomes available. *See Arizona*, 530 U.S. at 413 (holding that party could not raise preclusion as a defense when party could have raised the defense earlier but did not, "despite ample opportunity and cause to do so"); *Davignon v. Clemmey*, 322 F.3d 1, 15 (1st Cir. 2003) (holding that

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district court abused its discretion by allowing defendant to assert preclusion defense “at the eleventh hour.”)

The Board determines that it would not be just or efficient to consider issues (1)-(3) (issues that Versata waived) at this stage, after completion of briefing and after a final decision has been rendered. Accordingly, we need not, and will not, address Versata’s arguments directed to items (1)-(3).²

Versata argues that the broadest reasonable interpretation (BRI) standard is an examination tool, citing *In re Skvorecz*, 580 F.3d 1262, 1267-68 (Fed. Cir. 2009), and that none of the authority cited by the Board stands for the proposition that BRI is “substantive law applicable in any proceeding at the PTO.” Rehearing Req. 6-7. Contrary to Versata’s assertions, the Board did cite to authority that supports the Board’s position that the broadest reasonable interpretation standard applies in *inter partes* proceedings at the PTO. Final Decision 9, citing *In re Yamamoto*, 740 F.2d 1569 (Fed. Cir. 1984).

We also are not persuaded that the Final Decision overlooked Versata’s arguments that the promulgation of substantive Rule 42.300(b) exceeded the PTO’s procedural rulemaking authority by imposing substantive legal requirements. Rehearing Req. 7. The Final Decision addressed Versata’s arguments in that regard, explaining that “the AIA has provided the Office with new statutory and rulemaking authority, particularly with respect to post-grant

² To the extent that Versata “raised” claim and issue preclusion again, during the Trial (see Rehearing Req. 5:4-7), the Board determined that the issue was not an issue for trial. For example, once a trial is instituted, the Patent Trial and Appeal Board shall issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner. 35 U.S.C. § 328. To make such a determination, the Petitioner need not be a party. Therefore, the defense of issue and claim preclusion would have no effect on the Board’s statutory duty to determine patentability.

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reviews, including covered business method patent reviews. *See, e.g.*, Title 35, Chapter 32.” Final Decision 11 (footnote omitted). Versata disagrees with the Final Decision’s explanation in that regard. Rehearing Req. 7-8. A request for rehearing is not an opportunity to express disagreement with a decision. The proper course for Versata is to appeal, not to file a request for rehearing to re-argue issues that already have been decided. *See* 35 U.S.C. § 329.

Versata argues that the new AIA reviews are trials, not examinations, reexaminations, or reissues, and that, therefore, it was improper for the Board to look to authority addressing the claim construction standard for examinations, reexaminations, or reissues. Rehearing Req. 8. We are not persuaded by this argument. Again, Versata merely disagrees with the Final Decision, which is not the proper basis for rehearing. In any event, we disagree that broadest reasonable interpretation should not apply to proceedings such as the one before us, as we explained in the Final Decision. In particular, the Board explained how the legislative history, for example, supports the adoption of the broadest reasonable interpretation standard in post-grant reviews. Final Decision 16, citing to 157 Cong. Rec. S1375 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl).

We are not persuaded by Versata’s argument that post-grant review proceedings are district-court-like trials. Versata reasons that because post-grant review proceedings are district-court-like trials, the claim construction standard enunciated in *Phillips v. AHW Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) should apply. Rehearing Req. 8-9. We disagree with Versata that post-grant review proceedings are district-court-like trials. As set forth per 35 U.S.C. § 328(a), the Patent Trial and Appeal Board shall issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner and any new claim added under § 326(d). Nothing in 35 U.S.C. § 328(a) suggests that a petitioner

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must be a party for the Board to issue a final written decision, or that the Board is limited in its patentability determination only to consider those issues raised by a petitioner. For at least this reason, post-grant review proceedings are not like district court trials.

Versata argues that *stare decisis* requires that the Board apply the district court's claim construction. Rehearing Req. 10. The Board did not misapprehend or overlook this argument. Indeed, we addressed this argument. Final Decision 18. Versata's argument is unavailing for the same reasons we provided in the Final Decision.

Versata argues that, even assuming that the broadest reasonable interpretation standard applies, the Final Decision misapprehends or overlooks the broadest reasonable interpretation of Versata's '350 claims 17 and 26-29. Rehearing Req. 11. In particular, Versata argues that claim 17 requires that the sorting step is performed after the retrieving step, and that claims 17 and 26-29, when read in light of the specification, require the use of denormalized numbers, that SAP agreed to this interpretation as the broadest reasonable interpretation, and that the Board overlooked SAP's acknowledgement in that regard. Rehearing Req. 11. The Board disagrees with Versata's characterization of SAP's "acknowledgment." Rather, SAP agreed with the Board that the claims do not require the use of denormalized numbers. Final Decision 23, Reply 17. Moreover, the Final Decision, at pages 19-24, explains in detail the Board's claim construction. In its rehearing request, Versata merely disagrees with our construction, but has not shown how we misapprehended or overlooked any arguments made.

Versata argues that claims 17 and 26-29 of the '350 patent recite patent-eligible subject matter under 35 U.S.C. § 101, and that the Board was incorrect to

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conclude otherwise. Rehearing Req. 12. First, Versata argues that the Board found that the '350 patent claims contain two abstract ideas, and that no precedent exists where claims with multiple abstract ideas were found unpatentable. *Id.* 12. Versata does not direct us to where it raised this argument previously. We could not have overlooked or misapprehended an argument that is made for the first time in a rehearing request. Moreover, Versata does not explain, in any meaningful way, why a claim having more than one abstract idea becomes patent-eligible simply because the claim recites more than one abstract idea. While the Board did identify the concept of organizational hierarchies for products and customers as an abstract concept, and characterized determining a price as "also abstract" (Final Decision 29), we agree with SAP that breaking a single abstract idea into two concepts does not limit meaningfully a claim to a patentable application (Opposition 4-5). Versata has not directed us to authority that suggests otherwise.

Next, Versata argues that the Board misapprehended or overlooked the requirement that the claims be considered as a whole, for example, by addressing the claimed subject matter in each of the specific steps of storing, retrieving, sorting, eliminating, and determining of claim 17. Rehearing Req. 13. The Board did not misapprehend or overlook this requirement. It is clear from the Final Decision that the Board did consider the claims as a whole. Final Decision 31-33.

Versata argues that the Board misapprehended or overlooked the significance of the computer hardware limitations that are included in the claims and applied the wrong analysis in determining whether the claim limitations are meaningful, citing the Federal Circuit's decision in *Ultramercial, Inc. v. Hulu, LLC*, No. 2010-1544, 2013 U.S. App. LEXIS 12715 (Fed. Cir. 2013). Rehearing Req. 13-14. *Ultramercial* was decided after the Board's Final Decision, and therefore was not discussed per se. However, the Final Decision did take into

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account Versata's arguments regarding the significance of "the computer hardware limitations" in the claims. Final Decision at 29-30. We agree with SAP (Opposition 5) that the use of an unspecified computer in Versata's claims does not make the '350 patent claims patentable, either before or after *Ultramercial*. As we stated in our Final Decision, "claims do not become patentable under § 101 simply for reciting a computer element." Final Decision 29 (citing *Gottschalk v. Benson*, 409 U.S. 63, 68 (1972)). The Final Decision explained in detail why Versata's claimed invention did not recite anything more than "general purpose computer hardware." *Id.* 30. The *Ultramercial* decision, therefore, does not warrant granting Versata's rehearing request.

Lastly, Versata argues that the Board overlooked that the challenged claims are limited to a specific way of pricing products and do not preempt all practical uses of the alleged abstract idea. Rehearing Req. 15. This argument is based on Versata's disagreement with the Final Decision that Versata's claims add insignificant, conventional, and routine steps that are implicit in the abstract idea itself (Final Decision 31-33). However, as stated previously, mere disagreement with a decision is not the proper basis for rehearing. Versata's argument is unavailing for the same reasons we provided in the Final Decision.

Versata's request for rehearing is *denied*.

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PETITIONER:

Erika Arner
Finnegan, Henderson
Farabow, Garrett & Dunner, LLP
SAP-PGR@finnegan.com

and

J. Steven Baughman
Ropes & Gray, LLP
Steven.baughman@ropesgray.com

PATENT OWNER:

Nancy Linck
Martin Zoltick
Rothwell, Figg, Ernst & Manbeck, PC
nlinck@rfem.com
mzoltick@rfem.com



(12) **United States Patent**
Carter

(10) Patent No.: **US 6,553,350 B2**
(45) Date of Patent: **Apr. 22, 2003**

(54) **METHOD AND APPARATUS FOR PRICING PRODUCTS IN MULTI-LEVEL PRODUCT AND ORGANIZATIONAL GROUPS**

(75) Inventor: **Thomas J. Carter**, Austin, TX (US)

(73) Assignee: **Trilogy Development Group, Inc.**,
Austin, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/253,427**

(22) Filed: **Feb. 19, 1999**

(65) **Prior Publication Data**

US 2002/0026368 A1 Feb. 28, 2002

Related U.S. Application Data

(63) Continuation of application No. 08/664,837, filed on Jun. 17, 1996, now Pat. No. 5,878,400.

(51) **Int. Cl.⁷** **G06F 17/60**

(52) **U.S. Cl.** **705/20; 705/10**

(58) **Field of Search** 705/1, 10-14,
705/20, 26, 27

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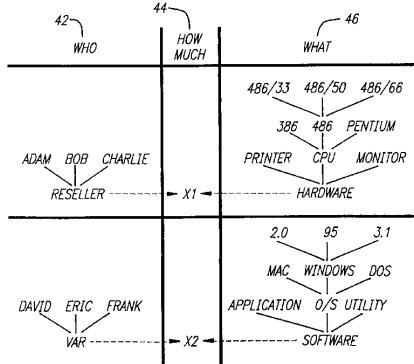
* cited by examiner

Primary Examiner—Frantzy Poinvil

(57) **ABSTRACT**

The system organizes various pricing tables and price adjustment tables and various products and purchasing organizations based on "who" (i.e. which purchasing organization) is purchasing "what" (i.e. which product). The system and method utilizes a denormalized table to relate the "who" to the "what" using denormalized numbers. The system and method organizes various purchasing organizations and products into hierarchical tables. These hierarchical tables are called organizational groups and product groups. Various price adjustments may be specified for each level of the organizational groups and product groups hierarchies. The price adjustments for a particular purchasing organization are determined by retrieving the price adjustments for that particular purchasing organization as well as the price adjustments for organizational groups above the particular purchasing organization in the organizational groups hierarchy. Likewise, the price adjustments for a particular product are determined by retrieving the price adjustments for that particular product as well as the price adjustments for product groups above the particular product in the product groups hierarchy. The system and method the various pricing adjustments applicable to a particular product offered to a particular purchasing group based on several criteria. After the sorting is accomplished the pricing adjustments are applied in sequence to arrive at a final price at which a particular product can be sold to a particular purchasing organization.

31 Claims, 15 Drawing Sheets



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FIG. 1
PRIOR ART

<i>WHO</i>	<i>WHAT</i>	486/33 CPU	486/50 CPU	486/66 CPU
ADAM		\$40	\$60	\$80
BOB		\$42	\$58	\$72
CHARLIE		\$44	\$68	\$92

FIG. 2
PRIOR ART

<i>WHO</i>	<i>WHAT</i>	486/33 CPU	486/50 CPU	486/66 CPU
ADAM		10%	12%	14%
BOB		8%	16%	22%
CHARLIE		15%	5%	2%

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FIG. 3

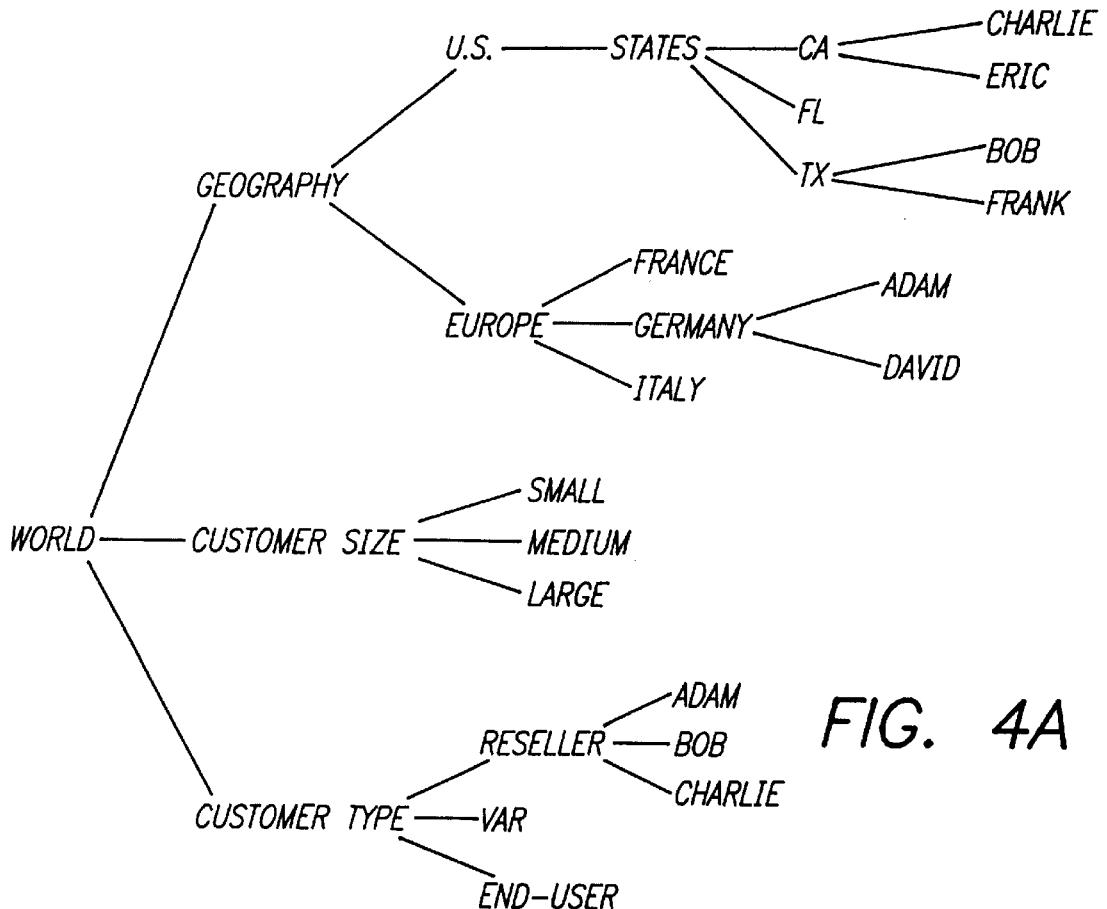
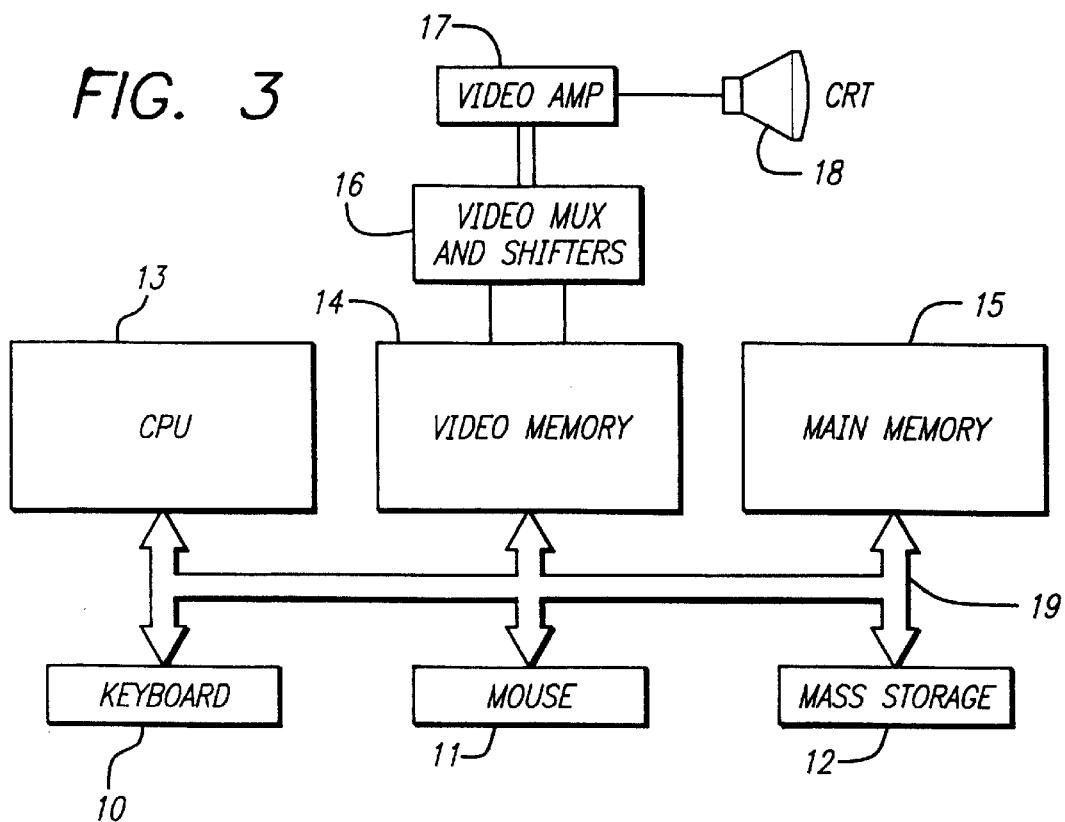


FIG. 4A

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FIG. 4B

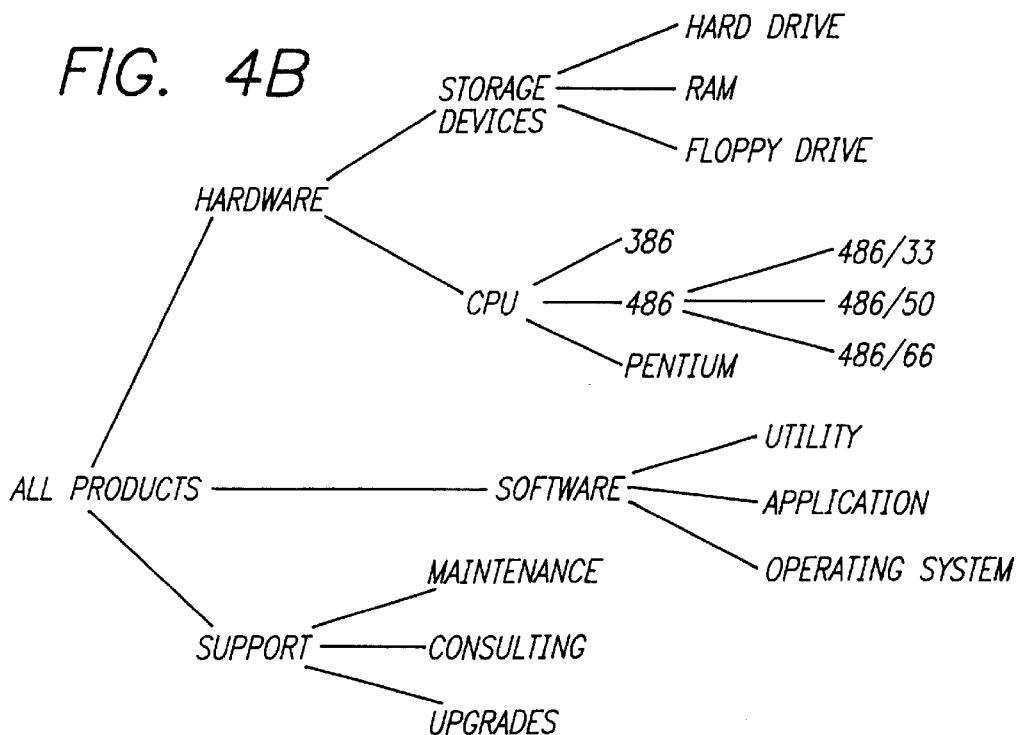


FIG. 5

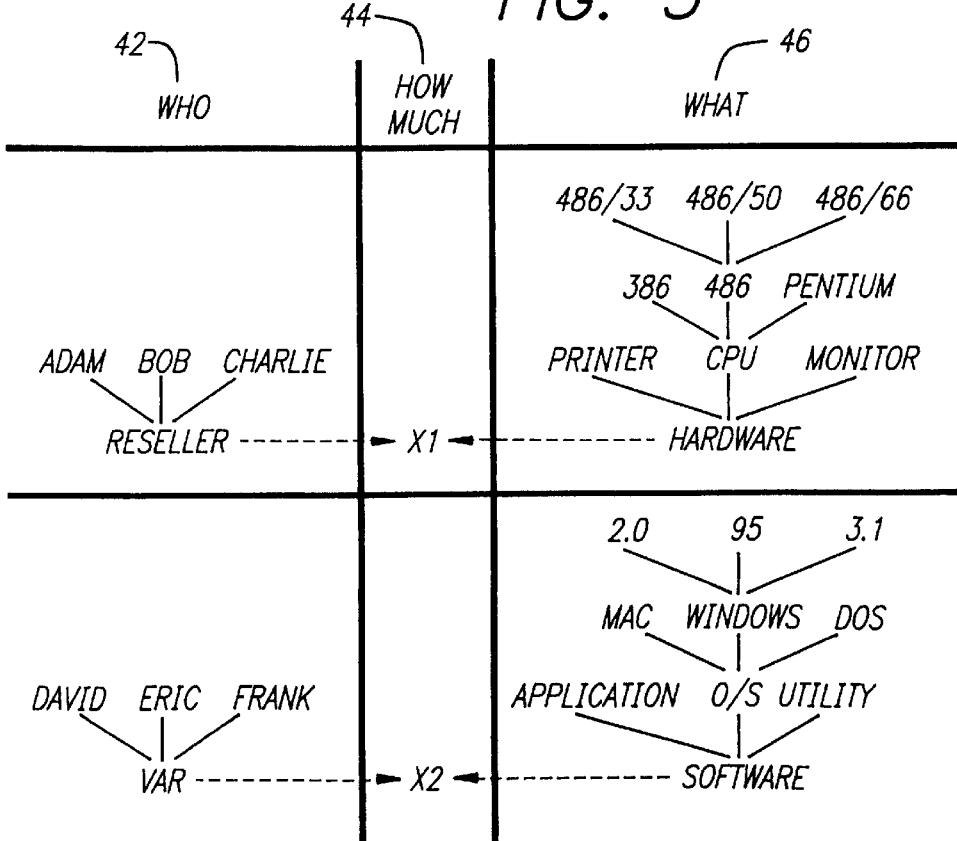
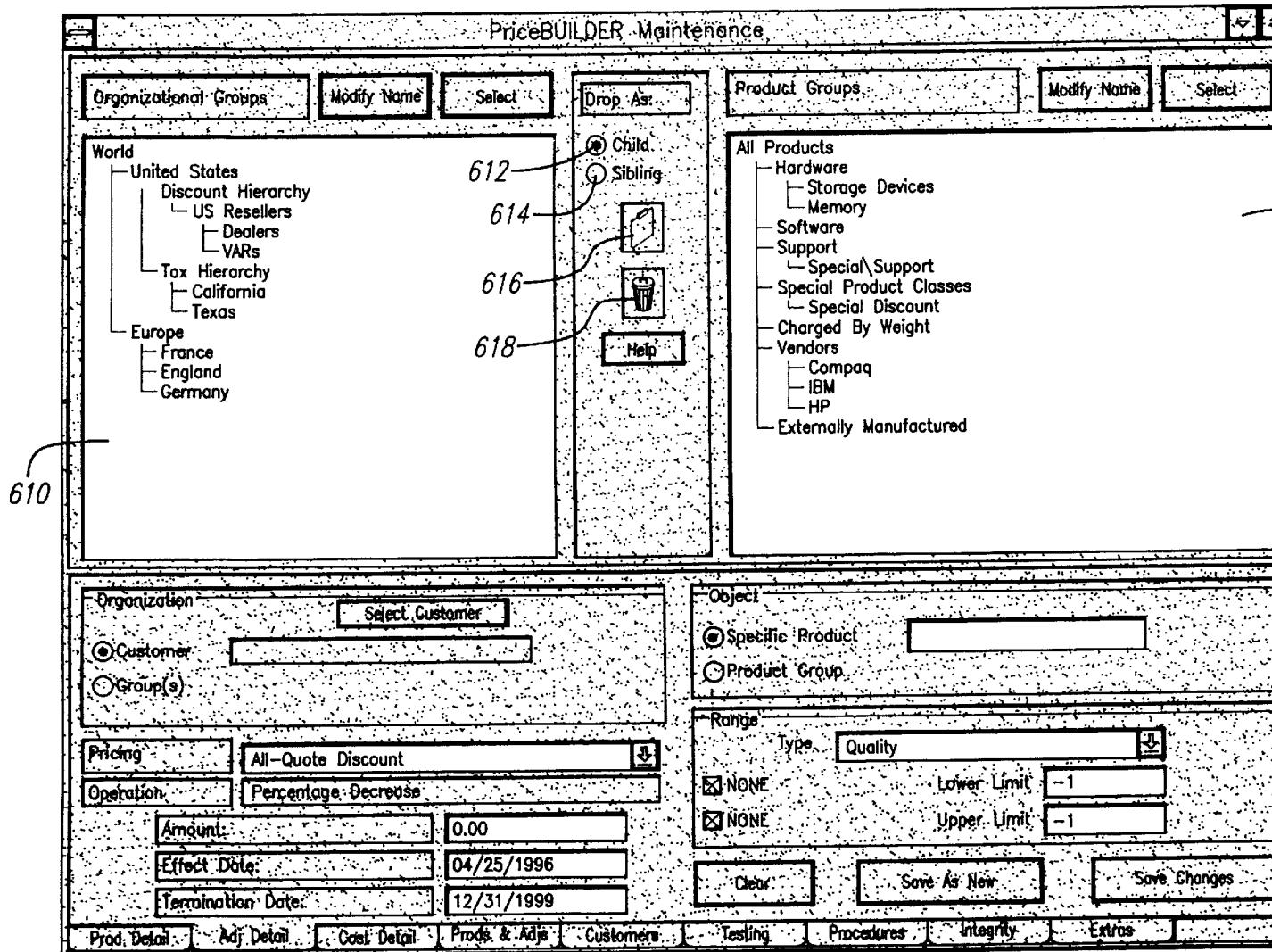
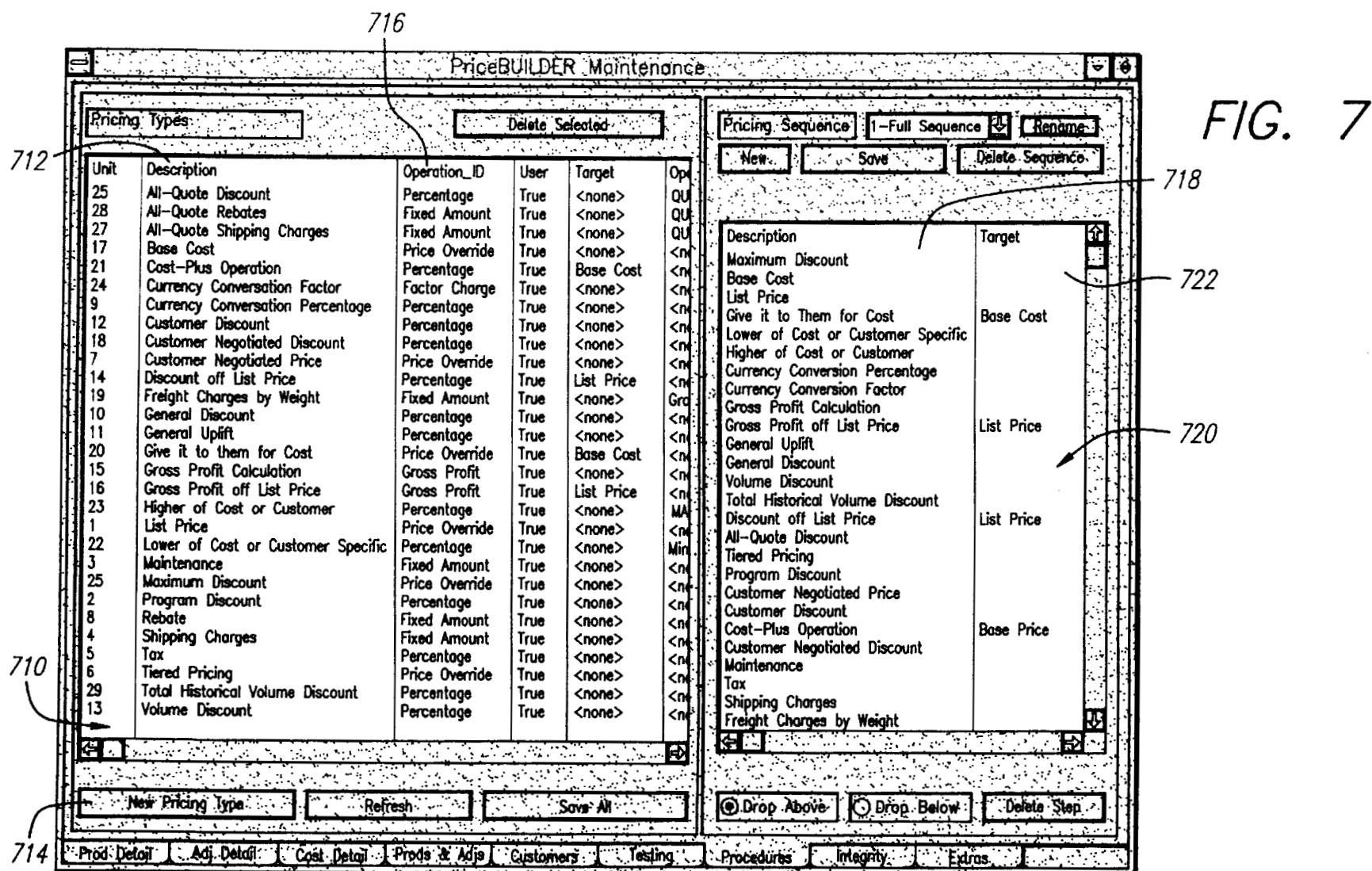


FIG. 6



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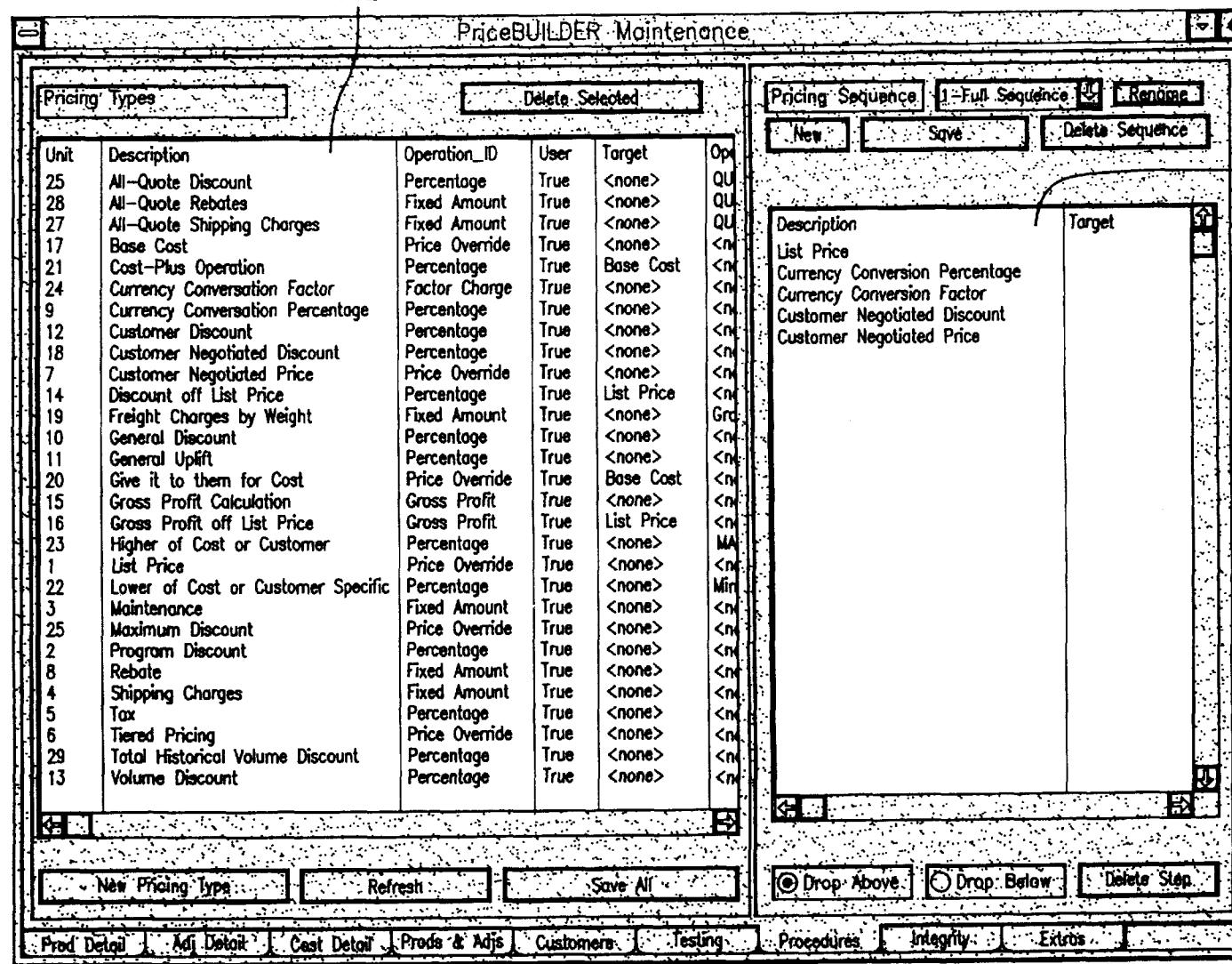


FIG. 8

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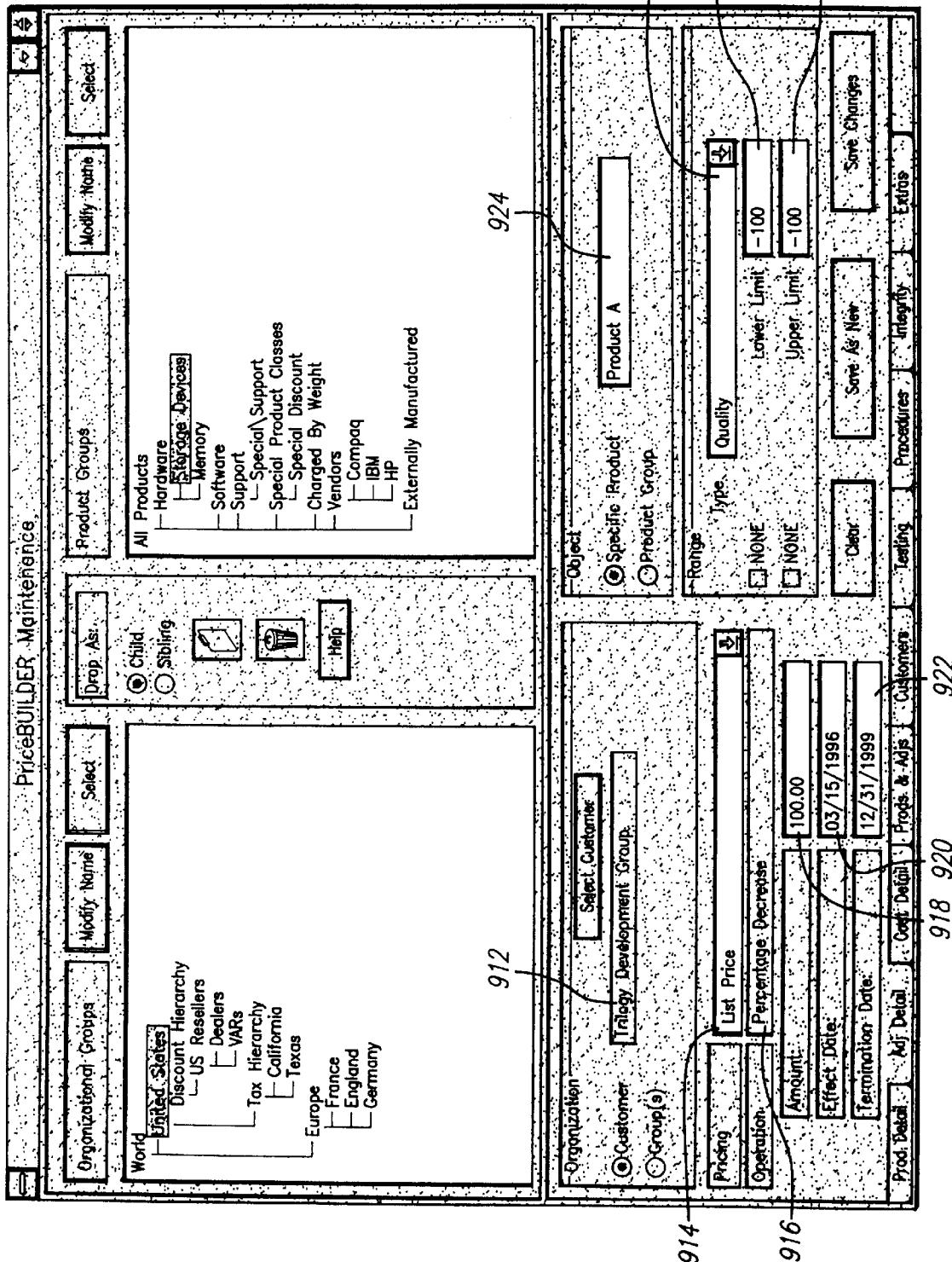
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FIG. 9



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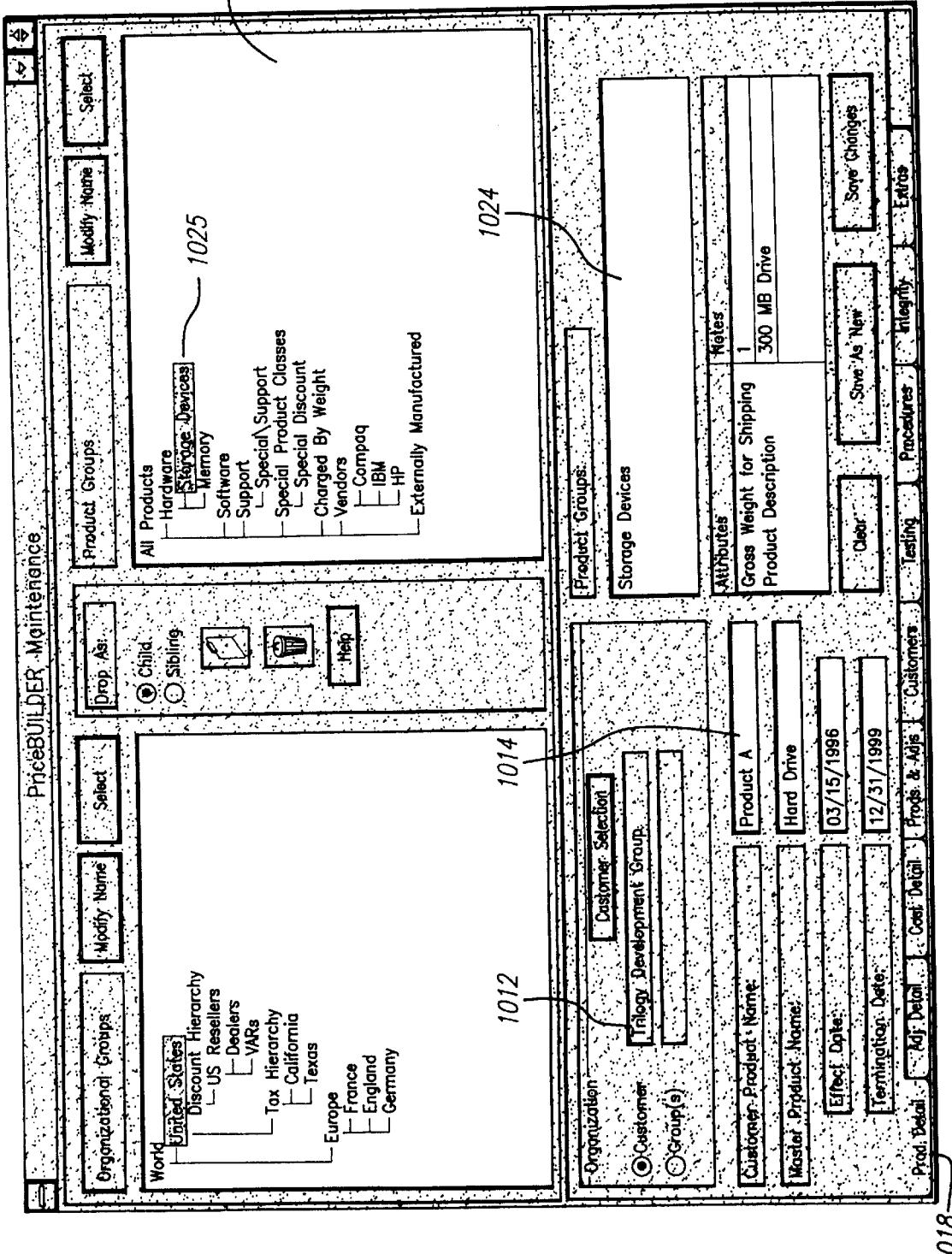
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FIG.



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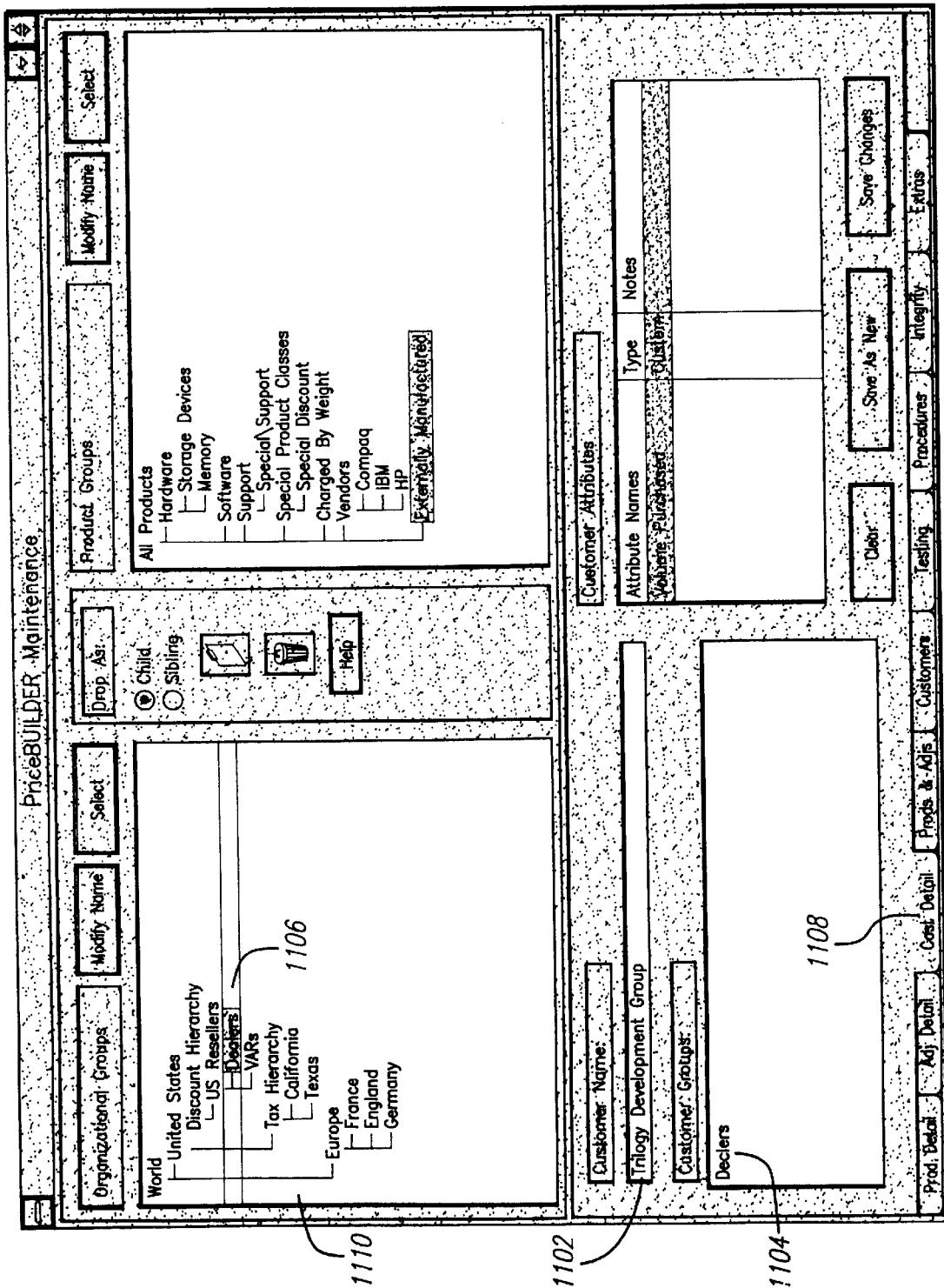
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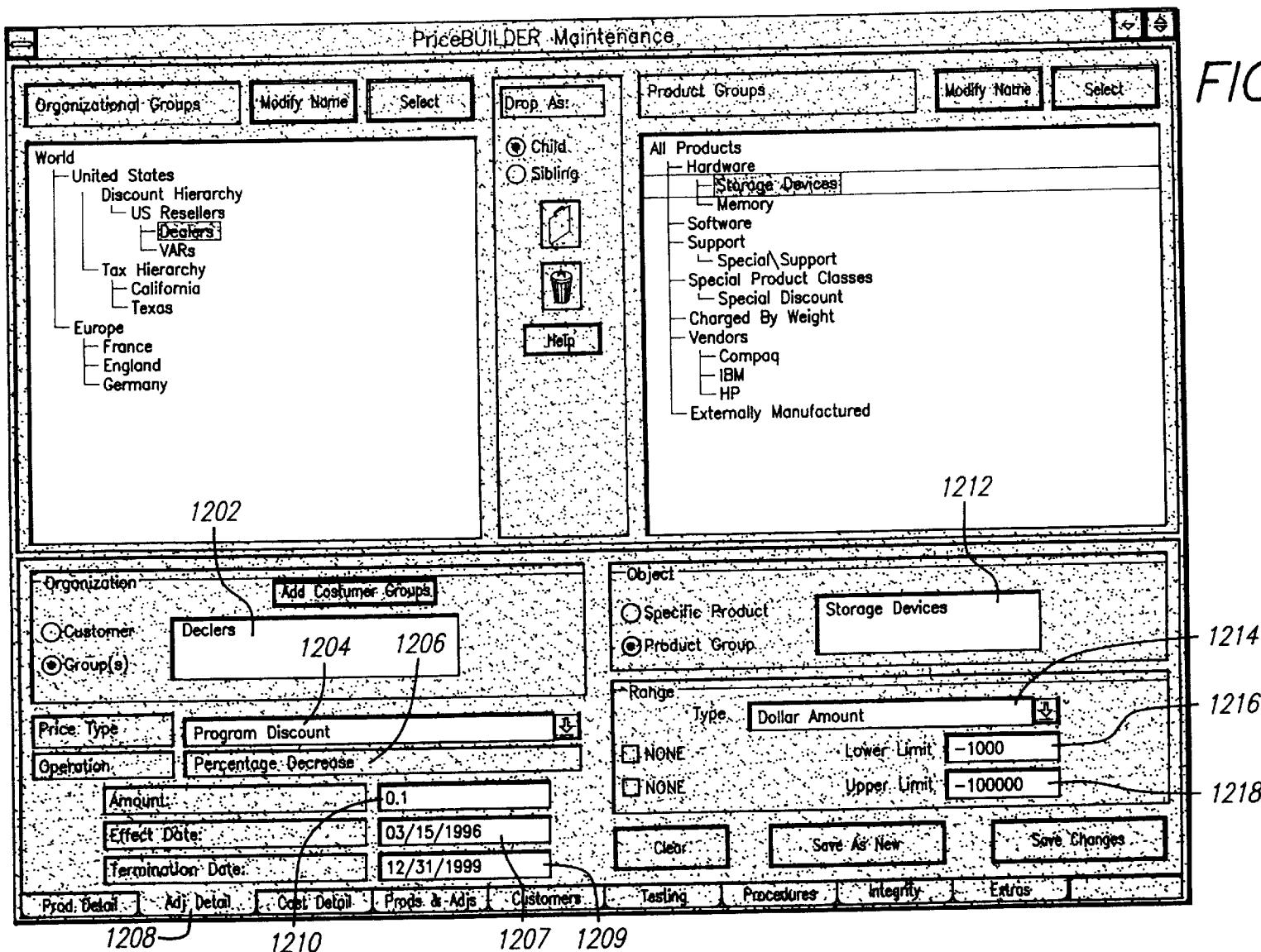
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FIG. 11



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FIG. 12



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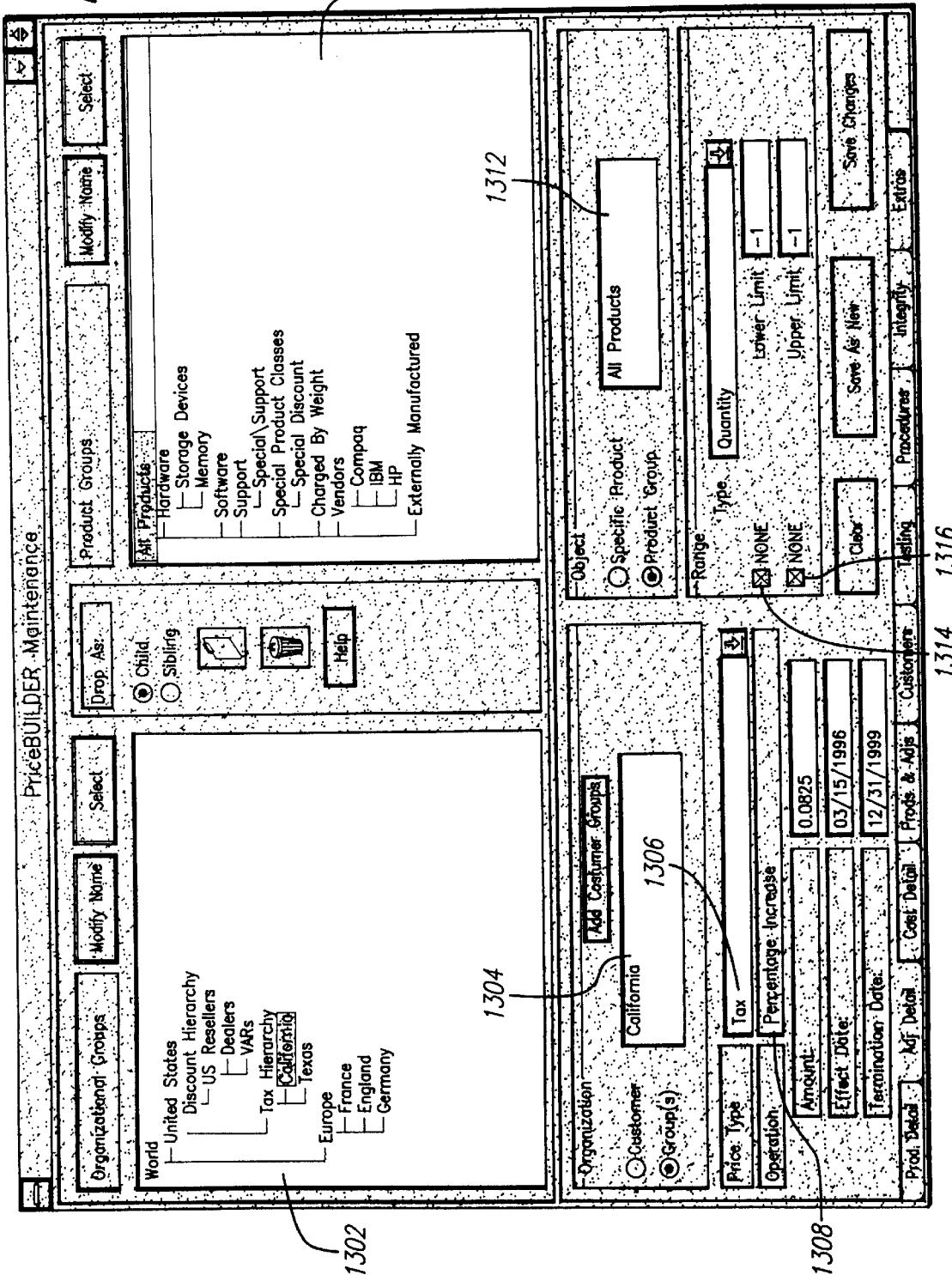
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FIG. 13



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FIG. 14

PriceBUILDER Maintenance

Organizational Groups	Modify Name	Select	Drop As:	Product Groups	Modify Name	Select																												
World <ul style="list-style-type: none"> — United States <ul style="list-style-type: none"> Discount Hierarchy <ul style="list-style-type: none"> — US Resellers Dealers VARs Tax Hierarchy <ul style="list-style-type: none"> California Texas Europe <ul style="list-style-type: none"> France England Germany 		<input checked="" type="radio"/> Child <input type="radio"/> Sibling	 	All Products <ul style="list-style-type: none"> Hardware <ul style="list-style-type: none"> Storage Devices Memory Software Support <ul style="list-style-type: none"> Special Support Special Product Classes Special Discount Charged By Weight Vendors <ul style="list-style-type: none"> Compaq IBM HP Externally Manufactured 																														
																																		
<table border="1"> <tr> <td>Organization</td> <td colspan="2">Add Customer Groups</td> <td>Object</td> <td colspan="3"></td> </tr> <tr> <td> <input type="radio"/> Customer <input checked="" type="radio"/> Group(s) </td> <td colspan="2">California</td> <td> <input type="radio"/> Specific Product <input checked="" type="radio"/> Product Group </td> <td colspan="3">Support</td> </tr> <tr> <td colspan="2"> Price Type: Tax Operation: Percentage Increase Amount: 0.00 Effect Date: 03/15/1996 Termination Date: 12/31/1999 </td> <td colspan="5"> Range Type: Quantity <input checked="" type="checkbox"/> NONE Lower Limit: -1 <input checked="" type="checkbox"/> NONE Upper Limit: -1 Clear Save As New Save Changes </td> </tr> <tr> <td colspan="7"> <input type="button" value="Prod. Detail"/> <input type="button" value="Adj. Detail"/> <input type="button" value="Cost Detail"/> <input type="button" value="Prod. & Adj."/> <input type="button" value="Customers"/> <input type="button" value="Testing"/> <input type="button" value="Procedures"/> <input type="button" value="Integrity"/> <input type="button" value="Extras"/> </td> </tr> </table>							Organization	Add Customer Groups		Object				<input type="radio"/> Customer <input checked="" type="radio"/> Group(s)	California		<input type="radio"/> Specific Product <input checked="" type="radio"/> Product Group	Support			Price Type : Tax Operation : Percentage Increase Amount : 0.00 Effect Date : 03/15/1996 Termination Date : 12/31/1999		Range Type : Quantity <input checked="" type="checkbox"/> NONE Lower Limit: -1 <input checked="" type="checkbox"/> NONE Upper Limit: -1 Clear Save As New Save Changes					<input type="button" value="Prod. Detail"/> <input type="button" value="Adj. Detail"/> <input type="button" value="Cost Detail"/> <input type="button" value="Prod. & Adj."/> <input type="button" value="Customers"/> <input type="button" value="Testing"/> <input type="button" value="Procedures"/> <input type="button" value="Integrity"/> <input type="button" value="Extras"/>						
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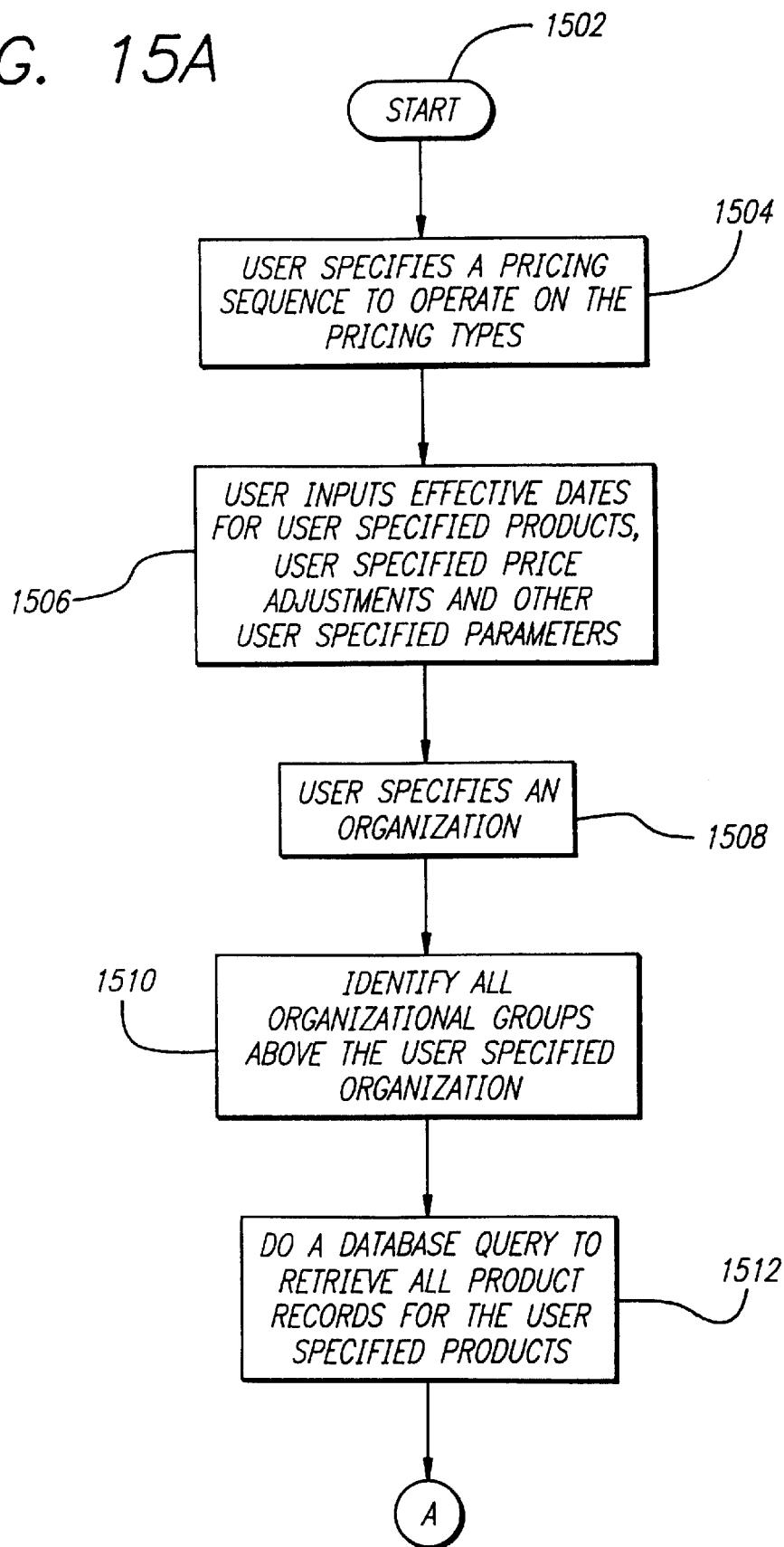
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FIG. 15A



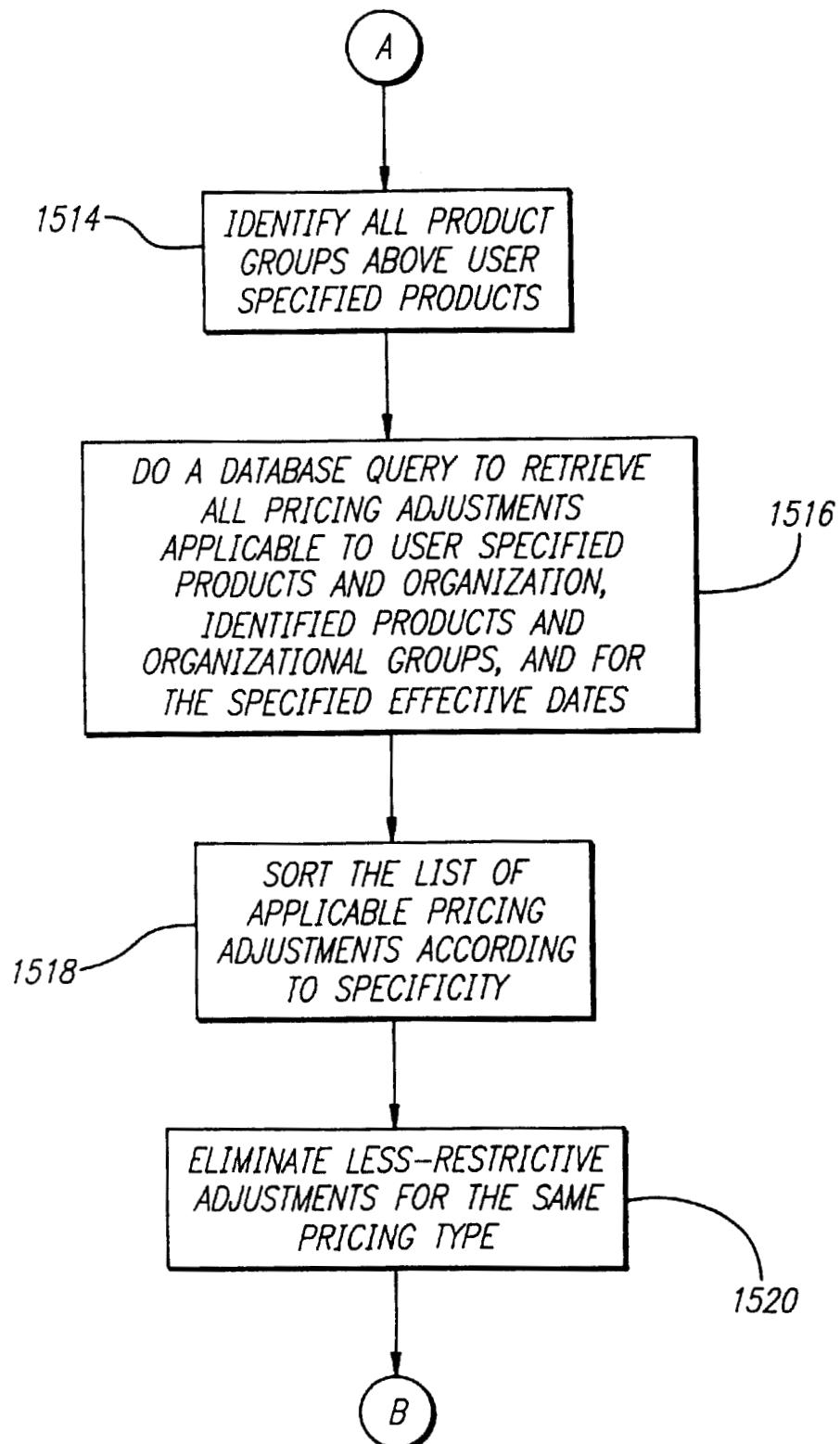
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FIG. 15B



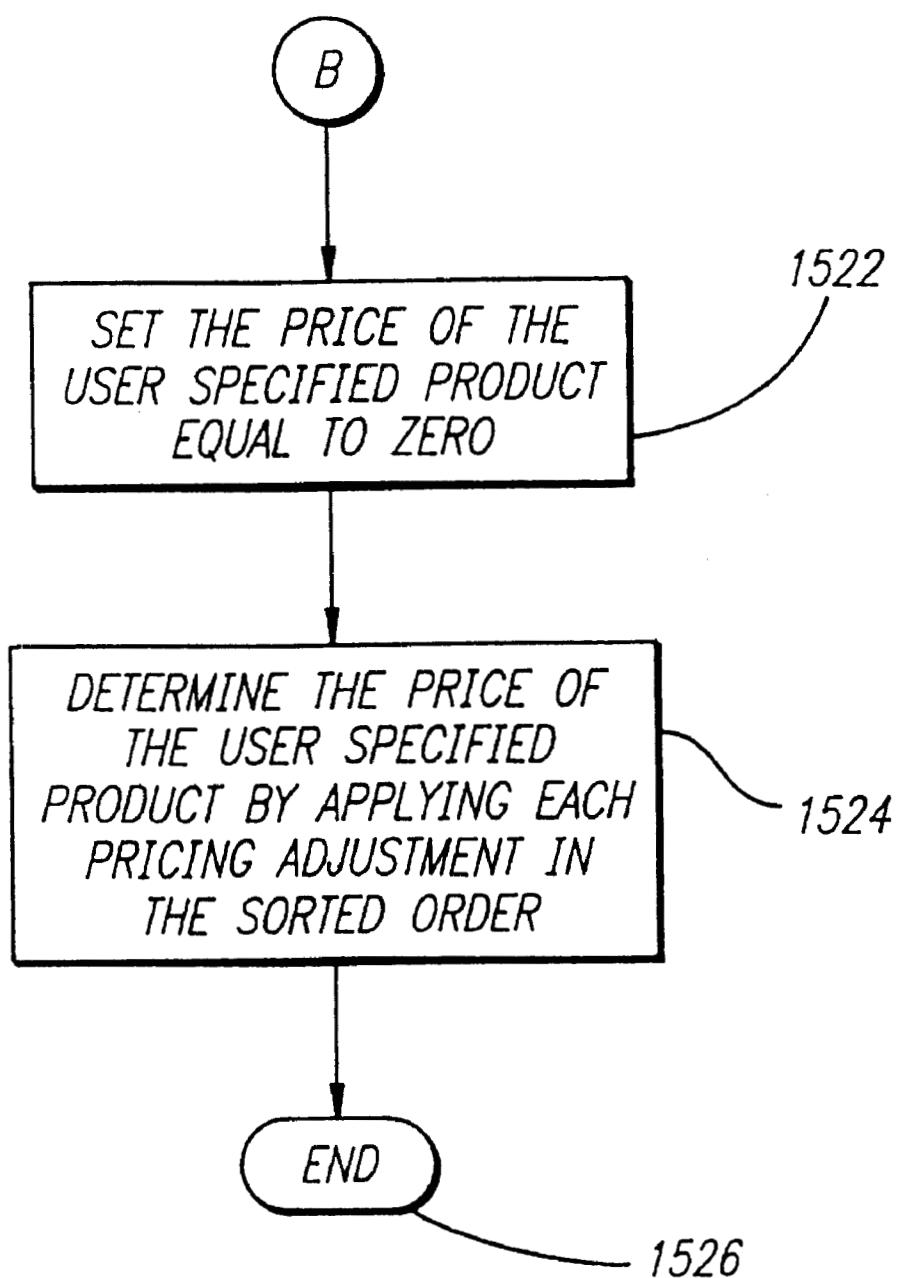
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FIG. 15C



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**METHOD AND APPARATUS FOR PRICING
PRODUCTS IN MULTI-LEVEL PRODUCT
AND ORGANIZATIONAL GROUPS**

This is a continuation of application Ser. No. 08/644,837 filed Jun. 17, 1996 now U.S. Pat. No. 5,878,400.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the field of computer-based pricing of products.

2. Background Art

Many business enterprises use field sales representatives to initiate, negotiate, and consummate sales transactions with customers. These sales representatives compete with sales representatives from other business enterprises. Sales representatives would prefer to conclude the sales transaction as completely as possible while meeting with the customer. However, it is often not possible to provide timely pricing information to potential customers at the time of the transaction.

As is explained below, there are large amounts of data that must be stored and used to provide accurate pricing for sales transactions. As a result, many companies maintain pricing information in a large central database. Sales representatives must access the database at the home office remotely through network access or by communicating with another person at the home office. The sales representative provides product information as input and receives pricing data as output. The sales representative then communicates this pricing information to the potential customer, often days after the sales meeting occurred. A delay in providing such critical data as pricing to a potential client can be fatal to the transaction, reducing sales.

The large amounts of data required to provide accurate pricing is understood by describing the factors that go into pricing. For many enterprises pricing is typically performed on a customer by customer basis. That is, for a particular product, each customer gets a price that is different from the price offered to other customers (in the present application the term "product" is used generically to refer to tangible products as well as intangible products, such as services). The difference in price for a particular product is a function of numerous factors. The type of product (e.g., hardware, software, or a particular service), the size of the customer, the type of customer organization (e.g., a wholesaler, distributor, or value added reseller), and the customer's geographic location are only a few of many factors that are used to determine a price recommendation for a sales representative.

Assuming that each product is sold at a unique price to a particular purchasing organization (the term "purchasing organization" refers to a single person as well as to purchasing entities such as companies and the like), conventional price determination methods tabulate the price for each product sold to a certain purchasing organization into a price table. For example, if the selling organization has ten thousand different products and there are ten thousand different purchasers, the price table would have one hundred million (i.e., ten thousand multiplied by ten thousand) entries.

Each product may have several attributes that contribute to pricing differential. The weight or size of a product could increase its base shipping cost. The product may be priced differently when it is sold separately instead of as part of a

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system. If there are ten possible attributes for the same product, the price table described above would have one billion entries. Further, for each product there are usually various adjustments to the basic price. For example, there are usually applicable state and local taxes, actual shipping charges, currency conversions, and a number of possible discounts. If there are ten different types of price adjustments for the same product for a given customer, the size of the table would grow to ten billion entries.

10 Each category of possible price adjustments has its own sub-adjustments. For example, the adjustment category of discounts includes different types of discounts (i.e. sub-adjustments). The different types of discounts can be a volume discount, a general purchase agreement discount, a time-limited discount effective for purchases within a certain date range, an initial offer discount, and so forth. If there are ten different types of discounts for each product or customer, the size of the price table would grow to one hundred billion entries.

15 20 In the prior art, a large mainframe computer database contains the price table ("mainframe computer" refers to any computer with a large database). The customer order is entered in a central billing and financing system within the mainframe computer. The mainframe computer then performs the pricing calculation according to the price tables stored in the database.

25 30 The following discussion provides a specific example of various tables used in the conventional pricing system discussed above. FIG. 1 shows an example of a basic price table. Each row in the table designates a potential customer that the product would be sold to, and each column designates the product will be sold, and the table entry corresponding to the basic unadjusted price for the product. In the 35 example of FIG. 1, a 486/33 CPU is sold to Adam at a price of \$40, a 486/50 CPU is sold to Adam at a price of \$60 and a 486/66 CPU is sold to Adam at a price of \$80. A 486/33 CPU is sold to Bob at a price of \$42, a 486/50 CPU is sold to Bob at \$58, and a 486/66 CPU is sold to Bob at \$72. Thus, as the basic price table of FIG. 1 indicates, each particular 40 product is sold to each customer at a price that is different from the price that the same product is sold to another customer.

45 According to the prior art, in addition to the basic price table of FIG. 1, various other tables must be stored and maintained in the mainframe database. For example, FIG. 2 shows a volume discount table that corresponds to the basic price table of FIG. 1. Thus, the price \$40 would be reduced by a discount of 10% if Adam purchases 486/33 CPU's in volume. Thus, Adam can purchase each 486/33 CPU at a volume-discounted price of $\$40 * (1 - (10/100))$, i.e. at \$36, as compared with the original price \$40. Similarly, a volume discount of 12% corresponds to the original price \$60, and a volume discount of 14% corresponds to the original price of \$80, and so forth.

50 55 A pricing application called R3 made by SAP has the prior art disadvantages explained above. For example, R3 requires a number of price adjustment tables and a number of database queries to retrieve applicable price adjustments. Likewise, an order entry application made by Oracle has a similar shortcoming in that a number of database queries are required to retrieve various price adjustments from a large 60 number of price adjustment tables.

The prior art has attempted to provide more responsive 65 pricing systems by providing sales representatives with price tables on portable computers that can be looked up during a sales transaction. However, current portable computers do

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not have the storage capacity for all of the price tables that are stored on the central database. As a result, the pricing generated by the portable computers may not be reliable, potentially costing the selling company money when the prices are too low, and potentially causing lost sales opportunities when the prices generated are too high.

SUMMARY OF THE INVENTION

The present invention is a method and apparatus for determining prices for various products offered to various purchasing organizations (in the present application the term "purchasing organization" refers to a single person as well as to purchasing entities such as companies and the like). As stated above, in the present application the term "product" is used generically to refer to tangible products well as intangible products, such as services. The invention overcomes the prior art's difficulty in storing, maintaining, and retrieving the large amounts of data required to apply pricing adjustments to determine prices for various products. Because of the invention's method and apparatus, prices for a large number of products can be determined by a laptop computer and the prior art's need to utilize a mainframe computer is alleviated.

The invention operates under the paradigm of WHO (the purchasing organization) is buying WHAT (the product). In the invention the WHO is defined by creating an organizational hierarchy of organizational groups, where each group represents a characteristic of the organizational group. One or more customers (i.e. purchasing organizations) may be members of each organizational group and each customer may be a member of more than one organizational group.

When a customer is selected in the present invention, all of the groups to which that customer belongs, and all pricing adjustments for which each group is eligible, are identified. For example, when the "customer type" group to which a particular customer belongs is identified, all of the pricing adjustments applicable to that customer type are applied to that particular customer. This allows pricing rules to be based on characteristics of each organizational group instead of basing the rules on a per-customer basis.

Similarly, a product group hierarchy is defined that can be applied to products. For example, a "hardware" product group may be defined that may include as members a number of products. Special pricing adjustments may be defined as applying to all hardware products. When a product is selected using the invention, all product groups to which the product belongs, and all applicable pricing adjustments, are identified.

The price adjustments for a particular purchasing organization are determined by retrieving the price adjustments for that particular purchasing organization as well as the price adjustments for other organizational groups that are above the particular purchasing organization in the organizational groups hierarchy. Likewise, the price adjustments for a particular product are determined by retrieving the price adjustments for that particular product as well as the price adjustments for other product groups that are above the particular product in the product groups hierarchy. The invention sorts the various pricing adjustments applicable to a particular product offered to a particular purchasing organization based on several criteria. After the sorting is accomplished the pricing adjustments are applied in sequence to arrive at a final price at which a particular product can be sold to a particular purchasing organization.

The combination of organizational groups and product groups hierarchies and the denormalized pricing table relat-

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ing a particular organization (or an entire organizational group) to a particular product (or an entire product group) result in some of the advantages of the present invention over the prior art pricing systems. These advantages enable the method and apparatus of the present invention to overcome the prior art's need to store, maintain, and retrieve huge amounts of data required to determine prices for various products offered to various purchasing organizations while applying a large number of price adjustments. The invention also overcomes the disadvantages of having to "hard-code" the "business logic" into the pricing system. In other words, the invention provides for flexibility in formulating a desired pricing system while reducing the prior art need to store, maintain, and retrieve huge amounts of data.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a basic price table according to the prior art.

FIG. 2 shows a prior art volume discount table corresponding to the basic price table of FIG. 1.

FIG. 3 shows an example of a computer system used to generate price recommendations according to the present invention.

FIG. 4A shows an example of an arrangement of an organizational group according to the present invention.

FIG. 4B shows an example of an arrangement of an product group according to the present invention.

FIG. 5 is an example of the invention's denormalized table for relating various purchasing organizations (or various organizational groups) to various products (or various product groups).

FIG. 6 shows a computer screen according to the present invention illustrating user arranged organizational and product groups.

FIG. 7 is an example of a computer screen according to the present inventions showing the various user specified pricing types and user specified pricing sequence.

FIG. 8 is another example of user specified pricing types and user specified pricing sequence.

FIG. 9 is an example of a computer screen according to the present invention showing pricing adjustment details for a specific purchasing organization and a specific product.

FIG. 10 is an example of a computer screen according to the present invention showing product details for a specific purchasing organization and a specific product.

FIG. 11 is an example of a computer screen according to the present invention showing customer details for a specific purchasing organization and a specific product.

FIG. 12 is an example of a computer screen according to the present invention showing pricing adjustment details for an organizational group and a product group.

FIG. 13 is an example of a computer screen according to the present invention showing pricing adjustment details for a geographical organizational group and a product group, using a Tax pricing type.

FIG. 14 is another example of a computer screen according to the present invention showing pricing adjustment details for a geographical organizational group and a product group, using a Tax pricing type.

FIGS. 15A through 15C illustrate the execution flow according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

A method and apparatus for pricing products in multi-level product and organizational groups is described. In the

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following description, numerous specific details are set forth in order to provide a more thorough description of the present invention. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific details. In other instances, well-known features have not been described in detail so as not to obscure the invention.

The present invention may be implemented on any conventional or general purpose computer system. An example of one embodiment of a computer system for implementing this invention is illustrated in FIG. 3. A keyboard 10 and mouse 11 are coupled to a bi-directional system 19. The keyboard and mouse are for introducing user input to the computer system and communicating that user input to CPU 13. The computer system of FIG. 3 also includes a video memory 14, main memory 15 and mass storage 12, all coupled to bi-directional system bus 19 along with keyboard 10, mouse 11 and CPU 13. The mass storage 12 may include both fixed and removable media, such as magnetic, optical or magneto-optical storage systems or any other available mass storage technology. The mass storage may be shared on a network, or it may be a dedicated mass storage. Bus 19 may contain, for example, 32 address lines for addressing video memory 14 or main memory 15. The system bus 19 also includes, for example, a 32-bit data bus for transferring data between and among the components, such as CPU 13, main memory 15, video memory 14 and mass storage 12. Alternatively, multiplexed data/address lines may be used instead of separate data and address lines.

In one embodiment of the invention, the CPU 13 is a 32-bit microprocessor manufactured by Motorola, such as the 68030 or 68040. However, any other suitable microprocessor or microcomputer may be utilized. The Motorola microprocessor and its instruction set, bus structure and control lines are described in MC68030 User's Manual, and MC68040 User's Manual, published by Motorola Inc. of Phoenix, Ariz. Main memory 15 is typically comprised of random access memory (RAM) and in the preferred embodiment of this invention, comprises 8 megabytes of memory. More or less memory may be used without departing from the scope of this invention. Video memory 14 is a dual-ported video random access memory (RAM), and in this invention consists, for example, of 256 kbytes of memory. However, more or less video memory may be provided as well. One port of the video memory 14 is coupled to video multiplexer and shifter 16, which in turn is coupled to video amplifier 17. The video amplifier 17 is used to drive the cathode ray tube (CRT) raster monitor 18. Video multiplexing shifter circuitry 16 and video amplifier 17 are well known in the art and may be implemented by any suitable means. This circuitry converts pixel data stored in video memory 14 to a raster signal suitable for use by monitor 18. Monitor 18 is a type of monitor suitable for displaying graphic images.

The computer system described above is for purposes of example only. The present invention may be implemented in any type of computer system or programming or processing environment. For example, in one embodiment, the invention's pricing system is implemented on a server in a computer network. In that case, no keyboard, mouse, or display is required to implement the present invention. In this embodiment, the invention is typically implemented with the aid of a laptop or otherwise remote terminal or computer which communicates with the server via a wired or wireless connection. For example, the communication between the laptop computer and the server can be accomplished through a cellular modem.

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As stated above, the invention overcomes the prior art's disadvantages in storing, maintaining, and retrieving large amounts of data. The invention operates under a simple paradigm of WHO (the purchasing organization) is buying WHAT (the product). In the invention the WHO is defined by creating an organizational hierarchy of purchasing organizations. A "purchasing organization" (also referred to as a customer) may be a single person. For example, Adam in FIG. 1 is a purchasing organization. A purchasing organization may also be a larger entity, such as a company. One or more customers (i.e. purchasing organizations) may be members of each organizational group and each customer may be a member of more than one organizational group. Similarly, one or more products may be members of each product group and each product may be a member of more than one product group.

FIG. 4A is an example of a hierarchy of purchasing organizations (i.e. the WHO's) according to the present invention. The hierarchy of purchasing organizations and organizational groups shown in FIG. 4A is an example of a unique hierarchy that can be specified by a user. As shown in FIG. 4A, a user may group various purchasing organizations into a broad category of "World," and create organizational groups such as "Geography," "Customer Size," and "Customer Type" branching off of the root category "World." The Geography branch can be divided into "U.S." and "Europe," and the U.S. branch can in turn be divided into different "States" such as "CA," "TX," and "FL." As shown in FIG. 4A, the Customer Size branch can be divided into "Small," "Medium," and "Large." The Customer Type branch is divided into "Reseller," "VAR," and "End-User." As stated above, this particular grouping of various purchasing organizations is wholly arbitrary and determined by the user of the invention's pricing system. For example, the branch "Europe" can be replaced by "Germany," or alternatively, the entire "Geography" branch can be deleted. In contrast, the prior art pricing systems do not provide users with the capability of generically specifying organizational groups.

According to the present invention, once the user selects a purchasing organization, the invention identifies the organizational groups to which the purchasing organization belongs. For example, if the user selects Adam or Bob as the purchasing organization, the invention identifies Adam or Bob as a Reseller. Accordingly, the various discounts that are applicable to a Reseller would also become automatically applicable to Adam or Bob. In this way, the invention simplifies the prior art's need for maintaining separate tables for each individual purchasing organization such as Adam or Bob. In other words, since Adam along with a number of others, such as Bob, are categorized as Resellers, the need to store, update, and retrieve separate tables for Adam or Bob is alleviated.

According to the present invention a purchasing organization may belong to a number of organizational groups. For example, as shown in FIG. 4A, Bob belongs to Resellers as well as to purchasing organizations located in Texas. Charlie is a Reseller as well as a purchasing organization located in California. Adam belongs to Resellers as well as to purchasing organizations in Germany. As illustrated below, this feature of the invention has significant advantages over the prior art pricing systems. The prior art pricing systems are "hard-coded" and do not permit categorizing a purchasing organization under multiple organizational groups. Accordingly, the prior art requires storage, retrieval, and maintenance of a number of separate pricing tables for organizations that are similar, but may belong to categories

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which make them not identical. For example, although Bob and Charlie are both Resellers, the prior art systems have to store separate price tables and price adjustment tables for Bob and Charlie since one is a Reseller in Texas and the other is a Reseller in California.

By way of example, according to the present invention, if Bob is a Reseller located in the state of Texas, selecting Bob as the purchaser would automatically invoke the applicable state tax for Texas. Likewise, if Charlie was a Reseller located in California, selecting Charlie would automatically invoke the applicable state tax for California. Thus, the invention overcomes the need to maintain separate tables for a Reseller who is located in Texas as opposed to one who is located in California.

Yet as another example, since Adam is a Reseller in Germany, when the user selects Adam, the invention automatically identifies Germany as the Geographic location of Adam. Subsequently, the invention recalls price adjustments for all Resellers, price adjustments for any purchasing organization located in Germany, and price adjustments specifically applicable to Resellers located in Germany. In the final determination of adjustments, the invention recognizes that the last price adjustment category (namely, the price adjustment category applicable specifically to Resellers in Germany) is more specific than the other two categories (namely, the category of purchasing organizations in Germany and the category of all Resellers). The invention then recalls the most restrictive category of adjustments (i.e. the adjustments applicable specifically to Resellers in Germany) to Adam.

The invention may determine that one category of price adjustments applicable to Resellers in Germany are currency exchange rate adjustments. Accordingly, the invention recalls a currency conversion table for converting U.S. currency to German currency. In this example, the prior art pricing systems had to store, update and retrieve a separate price adjustment for each purchaser based on the currency exchange rate for that purchaser's particular geographic location. The prior art system requires that a separate price table be updated for Adam alone every time the exchange rate for U.S. versus German currencies changes. Manifestly, this imposes tremendous demand on the computer system and the storage space required by the prior art pricing systems. Since the invention identifies Adam as a Reseller in Germany, the currency conversion requires a single table to keep track of the changes in the currency exchange rate between Germany and the U.S. As stated above, this table is automatically recalled when the user selects Adam as the purchaser.

FIG. 4B is an example of a hierarchy of products (i.e. the WHAT's) according to the present invention. The hierarchy of products and product groups shown in FIG. 4B is an example of a unique hierarchy that can be specified by a user. As shown in FIG. 4B, a user may group various products into a broad category of "All Products," and create product groups such as "Hardware," "Software," and "Support" branching from the broad category of "All Products." The "Hardware" branch can be divided into "Storage Devices" and "CPU," and the "CPU" branch can in turn be divided into "386," "486," and "Pentium." As shown in FIG. 4B, the "Software" branch can be divided into "Utility," "Application," and "Operating System." The "Support" branch is divided into "Maintenance," "Consulting," and "Upgrades." As with organizational groups, the particular grouping of various products is entirely arbitrary and determined by the user of the invention's pricing system. By contrast, the prior art pricing

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systems do not provide users with the capability of generally specifying product groups.

According to the present invention, once the user selects a product, the invention identifies the product groups to which the product belongs. For example, if the user selects "Pentium" as the product, the invention identifies Pentium as a CPU. Accordingly, the various discounts that are applicable to a CPU and all Hardware products would also become automatically applicable to a Pentium. In this way, the invention simplifies the prior art's need for maintaining separate tables for each individual products such as a Pentium. In other words, since a Pentium, along with a number of other products (such as "486" and "386"), are categorized as a CPU, the need to store, update, and retrieve separate tables for a Pentium CPU (and a 486 CPU and a 386 CPU) is alleviated.

In general, the invention works up the hierarchical arrangement of organizations and products and identifies all of the organizational groups and product groups that are at higher levels than those selected by the user. For example, if the user selects a 486/33 CPU, the invention identifies and invokes the categories of "486," "CPU," and "Hardware" (see FIG. 4B). Accordingly, all of the applicable price adjustments associated with the categories of "486," "CPU," and "Hardware" are retrieved and applied to 486/33. In this manner, the prior art need to maintain separate and unique price adjustment tables for 486/33 alone is overcome. As with the categorization of purchasing organizations under multiple organizational groups discussed above, a particular product may belong to a number of product groups. This feature of the invention has significant advantages over the prior art pricing systems. The prior art pricing systems do not permit categorizing a single product under multiple product groups. Accordingly, the prior art requires storage, retrieval, and maintenance of a number of separate pricing tables for similar products.

The present invention results in an efficient storage, management and retrieval of pricing data and generation of price recommendations. One aspect of the invention is now explained by referring to FIG. 5 and comparing the invention with the prior art systems for generation of price recommendations. FIG. 5 shows an example of a "denormalized" price table utilized in the present invention. Column 42 contains information as to "who" is the purchaser of the product being sold. In the example shown in FIG. 5, the purchaser may be Adam, Bob, Charlie, David, Eric, or Frank. Column 46 contains information as to "what" product is being purchased. Column 44 is designated a "how much" column and contains "denormalized" numbers. For purposes of the present invention, "denormalized" numbers refers to numbers that do not have a fixed unit and may assume a different meaning and different units depending on the pricing operation that is being performed. In other words, each denormalized number has a unique significance. For example, a denormalized number used in column 44 can refer to the price of a product in dollars. Another denormalized number used in column 44 may be a fraction, such as 1.08, and have no units associated with it. This denormalized number (i.e. 1.08) can refer to a tax rate and be used as a multiplying factor to calculate the final price of a product. As another example, a denormalized number such as 16 can refer to a fixed rebate. This number is used in a subtraction operation. In other words, this number (i.e. 16) is deducted from the price of a product as an adjustment to the price. The specific units of a denormalized number and how it will be applied to adjust the price of a product are determined during "run time" of the invention's system based on information

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associated with each denormalized number. The invention uses a price adjustment sequence (discussed below) to determine how and when each denormalized number will be applied to adjust the price of a particular product.

Suppose that Adam is interested in purchasing a 486/33 CPU. According to the prior art, this would require retrieving a basic price table such as that shown in FIG. 1. As explained above, a table such as the one shown in FIG. 1 would be one of many basic price tables stored in the prior art database. The reason is that there is a huge number of possible purchasers and possible products, and in a worst case scenario each purchaser may be offered a different price on a particular product. Thus, the retrieved basic price table of FIG. 1 would be one which contains price information for Adam as the prospective purchaser and a 486/33 CPU as the particular product being sold.

The basic price table shown in FIG. 1 does not take into account whether the prospective purchaser (for example, Adam) is in a category common with other purchasers. Nor does it take into account whether the particular product (for example, a 486/33 CPU) is in a category common with other products. Accordingly, a large number of different tables are needed to accommodate all possible combinations of purchasers and products. To make matters worse, the prior art pricing systems need various tables to apply various adjustments to the basic price of a particular product for a prospective purchaser. These adjustments can be, for example, applicable state and local taxes, actual shipping charges, currency conversions, and various discounts. Moreover, each category of adjustments in the prior art has its own sub-adjustment tables. For each product and for a given customer, there are usually different types of discounts. For example, there can be a volume discount, a general purchase agreement discount, a discount effective for certain dates of purchase, an initial offer discount, and so forth. The prior art table in FIG. 2 is an example of a volume discount adjustment that may apply to the price of a 486/33 CPU offered to Adam. Thus, in case Adam is purchasing 486/33 CPU's in volume, the table in FIG. 2 would result in a price reduction of 10% from the basic price of \$40 obtained from the basic price table of FIG. 1.

According to the present invention, the organizational category of the purchaser and the product category of the product are determined prior to determining the basic price and applicable adjustments to the basic price. For example, as shown in FIG. 5, the invention first determines that the purchaser (Adam) is a Reseller. It is seen that Bob and Charlie are also Resellers. FIG. 5 also shows that David, Eric, and Frank are purchasers that are "Value Added Resellers" ("VAR"). Other purchasers (not shown in FIG. 5) would also belong to a specific category. The invention then determines that a 486/33 CPU belongs to the category of 486 CPU's, and that 486 CPU's belong to the category of CPU's, and that CPU's belong to the category of Hardware. Thus, the organization (in the example, Adam) and the product (in the example, a 486/33 CPU) are categorized as a Reseller and Hardware respectively. The present invention then recognizes that all Resellers get a certain price adjustment, for example a general discount of 10%, when purchasing Hardware. The general discount of 10% applies to all categories of Hardware purchased by Resellers. The invention also recognizes that a 486/33 CPU is offered to all resellers at a certain basic price, for example \$40. The selling price of a 486/33 CPU to Adam is then determined by applying a price reduction of 10% to the basic price of \$40. Thus, a 486/33 CPU is offered to Adam for \$36.

The invention can also account for any combination of purchasing organizations, organizational groups, products,

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or product groups and arrive at a final offering price in an efficient manner. For example, all CPU's may be offered to all Resellers at a general discount of 5%. This means that the same discount would be applicable to Adam (a Reseller) when purchasing a 486/33 CPU. This 5% general discount may or may not be in addition to the general discount of 10% (discussed above) applicable to Resellers for purchasing Hardware. As another example, another general discount can apply to all Resellers purchasing 486 CPU's, and yet a specific discount can apply to all Hardware purchased by a particular Reseller such as Adam. The invention would also apply this general and specific discounts to Adam when purchasing a 486/33 CPU. Thus, the invention can account for and apply a combination of various discounts to a purchase of a 486/33 CPU by Adam. In other words, the invention applies general discounts applicable to Resellers when purchasing various sub-categories of Hardware, as well as a specific discount applicable uniquely to Adam when purchasing Hardware. Thus, the invention can combine any number of general or specific discounts to determine the offering price of a particular product offered to a particular purchasing organization.

The invention can apply a number of complicated price adjustments. For example, the invention can apply price adjustments to subcategories to which the organization or the product belongs. For example, a price adjustment (in addition to the 5% discount discussed above) may be applicable to all 486 CPU's purchased by Resellers. Since a 486/33 CPU belongs to the subcategory of a 486 CPU, the additional price adjustment would apply to a 486/33 CPU purchased by a Reseller. Likewise, price adjustments applicable to CPU's in general would also be applicable to a 486/33 CPU as shown in FIG. 5. The same reasoning applies to subcategories in the organizational groups. For example, if a Reseller (such as Adam) has three branches in three different cities (not shown in FIG. 5), the price adjustment applicable to Adam would also apply to each of its three branches. Thus, as with various product groups, additional price adjustments can apply in various levels in the organizational groups. Therefore, grouping of products and organizations into various categories eliminates the need to maintain a huge number of basic price and adjustment tables to account for every possible combination of purchasing organizations and products.

Still referring to FIG. 5, column 44 is labeled as a "how much" column. The numbers in this column are used to arrive at a price adjustment. The numbers in this column are "denormalized," meaning that each number in this column has a unique significance. In other words, a number in this column could refer to a basic price, or an adjustment to the basic price such as a tax rate, a shipping charge, a currency conversion rate, or various discounts applicable to the basic price. Use of denormalized tables results in further advantages in the present invention as described below.

The invention's denormalized price table overcomes a prior art disadvantage since the invention is not limited in speed or in storage space by the prior art's requirement of retrieving several tables from the database (it is noted that although the invention is discussed in terms of a "database," the invention can be implemented using any data source that may be different from a conventional database). The entries in the denormalized column (i.e. column 44) of the present invention can signify numeric values of a variety of different parameters. These parameters can be the basic price of a product or various adjustments and sub-adjustments applicable to the basic price. As stated above, these parameters would have required their own separate tables in the prior

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art. For example, X1 in column 44 can refer to a discount applicable to a general discount of 10% applicable to all categories of hardware purchased by Resellers. Alternatively, X1 could denote a shipping charge of \$15 applicable to shipment of all hardware to resellers. Yet as another example, X1 could designate a state tax of 8% applicable to all Hardware sold to Resellers. In each of these cases, the meaning of X1 and the interpretation of the value assigned to X1 is different. In the case of a general discount of 10%, X1 has a value of 0.10 and is used in an equation involving the basic price of a product in order to reduce the basic price by 10%. In the case of a shipping charge of \$15, the final price of a product (after other adjustments such as discounts and taxes) is increased by 15.00. In the case of a state tax of 8%, X1 has a value of 0.08 and is used in an equation involving the price of a product after certain adjustments (such as a general discount). According to the present invention, the particular treatment of the value of X1 is determined during run time. In other words, the numbers in the prior art tables are "abstracted" and stored as a denormalized number in the "how much" column (i.e. column 44 in FIG. 5), and the interpretation of the numbers are left up to the interpretation engine of the present invention. This dynamic interpretation of abstracted numbers during run time along with the invention's feature permitting a user to flexibly specify and change product and organizational groups is in contrast to the static nature of the prior art pricing systems. The prior art pricing systems utilize fixed and predetermined pricing and price adjustment tables that are "hard-coded" and cannot be changed to match a particular user's pricing preferences or the user's method of doing business. The invention also permits a user to define the sequence in which various price adjustments are applied. For example, the user can define a sequence in which a tax adjustment is the last adjustment, and a currency conversion is the first adjustment.

In contrast, the prior art systems do not use denormalized price tables. For example, a pricing application called R3 made by SAP, does not utilize denormalized price tables. As a result, R3 has the prior art disadvantages in requiring a number of price adjustment tables and a number of database queries to retrieve applicable price adjustments. Likewise, an order entry application made by Oracle has a similar shortcoming in that it does not use denormalized price tables and as such the Oracle application requires a number of database queries to retrieve various price adjustments from a large number of price adjustment tables.

Thus, FIG. 5 illustrates that the invention greatly simplifies the prior art tables in at least two ways. First, products and organizations are categorized in different product and organizational groups. Second, the various product and organizational groups are associated with denormalized numbers whose interpretation is determined during run time. Each of these two simplifications introduced by the present invention results in a great reduction in the number of tables stored in different locations of the prior art mainframe database. One way to view these two simplifications is that each of these two simplifications result in a reduction of the number of queries to the database. In other words, the prior art made a number of queries for obtaining the data in the basic price table and various adjustment and subadjustment tables in the prior art. As explained above, the invention makes fewer queries because the invention has eliminated the need for the very large number of prior art tables. A reduction in the number of queries to the database also results in a speed advantage in the present invention. Each query to a typical pricing database takes about one to two

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seconds for completion. Thus, the reduction in the number of queries results in the speed advantage in the present invention.

The prior art price generation systems have a predefined organizational hierarchy that is fixed and cannot be changed by a user. In contrast, the present invention provides great flexibility for a user to specify a unique organizational hierarchy. The "who" column (column 42) in FIG. 5 shows an example of two different organizations, i.e. a Reseller and a Value Added Reseller ("VAR"). These organizations are typically part of a family or tree of organizations. Just as a 486/33 CPU belongs to the families of 486 CPU's, CPU's, and hardware respectively, a Reseller or a VAR is typically part of a family or hierarchy of organizations. The invention permits the user to specify, with total flexibility, a unique hierarchy (or family tree) for various organizations that are purchasers of the user's products or services.

Another advantage of the present invention is that the invention greatly simplifies creation and maintenance of the invention's pricing data. For example, in the prior art, creation of pricing data for a new product requires addition of new price tables such as that shown in FIG. 1. Moreover, for each added new price table, the prior art requires a number of adjustment tables such as the volume discount table shown in FIG. 2. Accordingly, the addition of a new product requires a large amount of data to be added to the prior art pricing systems. By contrast, the present invention permits a user to add price adjustments to an entire category of products, thus overcoming the prior art need to add a number of price adjustment tables for each product. For example, a modification in the price adjustments applicable to the Hardware product group in FIG. 4B is sufficient to modify price adjustments applied to all 486 CPU's. Accordingly, the need to create price adjustment tables separately applicable to 486 CPU's is overcome. Specifically, the need to create price adjustment tables separately applicable to 486/33 CPU, 486/50 CPU, and 486/66 CPU is overcome. Thus, according to the present invention, the common price adjustments in a product group that is above a new product eliminate the prior art need for the large number of separate price adjustment tables needed for accomadating the addition of a new product.

Moreover, in the prior art, creation of pricing data for a new purchaser also requires addition of new price tables such as that shown in FIG. 1. Further, for each added new price table, the prior art requires a number of adjustment tables. Accordingly, the addition of a new purchaser requires a large amount of additional data in the prior art pricing systems. By contrast, the present invention permits a user to add price adjustments to an entire category of organizational groups, thus overcoming the prior art need to add a number of price adjustment tables for each new purchaser. For example, a modification in the price adjustments applicable to the Reseller organizational group in FIG. 4A is sufficient to modify price adjustments applied to Adam, Bob, and Charlie. Accordingly, the need to create price adjustment tables separately applicable to each Reseller is overcome. Specifically, the need to create price adjustment tables separately applicable to Adam, Bob, and Charlie is overcome. Thus, according to the present invention, the common price adjustments in an organizational group that is above a new purchaser eliminate the prior art need for the large number of separate price adjustment tables needed for accomadating the addition of a new purchaser.

For the same reasons that creation of new pricing data for a new product or purchaser is greatly simplified in the present invention, the maintenance of existing pricing data

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is also greatly simplified. For example, when price adjustments applicable to an entire product group are changed, the price adjustments applicable to individual products within the product group are automatically changed. This overcomes the prior art need to separately change price adjustment tables corresponding to each product. Likewise, when price adjustments applicable to an entire organizational group are changed, the price adjustments applicable to individual purchasers within the organizational group are automatically changed. This overcomes the prior art need to separately update price adjustment tables corresponding to each purchaser. This total flexibility in creating and maintaining pricing data of the present invention is a significant advance over the prior art's rigid and difficult procedures to creating and maintaining pricing tables. Moreover, the invention's flexibility in creating and maintaining pricing data also results in a smaller amount of pricing data than that required by the prior art.

An example of an organizational and a product group is shown in FIG. 6. Window 610 shows an example of organizational groups as shown on a computer screen according to the present invention. A user can arbitrarily select the different grouping of the organizations. For example, in FIG. 6, the user has selected to divide the "World" into two broad categories of "United States" and "Europe." The category "United States" is in turn divided into "Discount Hierarchy" and "Tax Hierarchy." The "Discount Hierarchy" is itself divided into "US Resellers" which comprises "Dealers" and "VARs." The "Tax Hierarchy" is divided into "California" and "Texas." The broad category of "Europe" is itself divided into "France," "England," and "Germany." As stated above, each of the organizational groups are determined solely by the user. To add a particular organizational group, the user first highlights the target group. For example, the user may highlight "England" as the target group. Then the user selects the folder icon 616, indicating that a new group is to be added. The user then determines whether the organizational group is to be added as a subcategory of "England" or in the same category as "England." In the first case, the user selects "Child" 612. This causes a branch to be created under the category of "England." For example, the user can create branches such as "Southern England," "Central England," and "Northern England." In the second case, the user selects "Sibling" 614. This causes a branch to be created under "Europe" at the same level that the group "England" exists. For example, the user can create branches such as "Italy" and "Spain." Thus, "France," "England," "Italy," "Spain," and "Germany" would all be at the same level and they would all be one level below "Europe." Finally, any organizational group may be deleted simply by "dragging" and dropping the group in the trash can icon 618.

The explanations given above with respect to the user selection of how to group the various purchasing organizations also apply to the user selecting various product groups. Window 620 shows an example of the grouping of "All Products" according to a particular user's way of doing business. As shown in window 620 of FIG. 6, "All Products" are divided into broad categories of "Hardware," "Software," "Support," "Special Product Classes," "Charged by Weight," "Vendors," and "Externally Manufactured." Each of these broad categories is in turn divided into subcategories as shown in window 620. As stated above, each of the product groups are determined solely by the user. To add a particular product group, the user first highlights the target group. For example, the user may highlight "Vendors" as the target group. Then the user adds a desired product group as desired in the manner described

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above with respect to the organizational groups. Any product group may be deleted simply by "dragging" and dropping the group in the trash can icon 618.

FIG. 7 illustrates how the numbers in the "How Much" column 44 of FIG. 5 are determined. Window 710 in FIG. 7 shows the various "pricing types," and window 720 shows a sample "pricing sequence." Examples of pricing types specified by a user are shown in column 712. Some of the pricing types shown in column 712 are Base Cost, Currency Conversion Factor, Customer Discount, Customer Negotiated Discount, Customer Negotiated Price, Discount off List Price, General Uplift, List Price, Rebate, Shipping Charges, Tax, and Volume Discount. A user may simply click on "New Pricing Type" icon 714 to specify any desired pricing type. For example, the user may specify a pricing type called, the "President's Discount" applicable to certain designated customers.

Column 716 is called the "Operation" column. Operation column 716 specifies the type of mathematical operation that is performed for each pricing type. For example, Operation column 716 specifies that a Base Cost is an override operation. In other words, a Base Cost overrides all prior pricing calculations. Thus, if various price adjustments yield a price that is lower than the Base Cost, the Base Cost operation would replace that price with a price equal to the basic cost of the product. Operation column 716 specifies that a List Price is also an override operation. However, a Currency Conversion Factor is specified to be a Factor Change operation according to Operation column 716. For example, a factor of 1.33 may be multiplied by the price of a product in U.S. currency to yield the price of the product in another country's currency. The Currency Conversion Percentage pricing type in column 712 is specified to be a Percentage operation in column 716. For example, the percentage can be 133%. In other words, the price of a product in U.S. currency is multiplied by 133% to yield the price of the product in a particular foreign currency.

As another example, a Customer Negotiated Discount pricing type (shown in column 712) is a Percentage operation as specified in column 716. For example, the percentage can be 75%. In other words, the price of a product is multiplied by 75% to yield the price of the product after the Customer Negotiated Discount. As yet another example, a Tax pricing type (shown in column 712) is also a Percentage operation as shown in column 716.

The prior art does not allow a user to specify or modify any pricing types. The invention's feature in permitting a user to specify various pricing types allows the user to flexibly set a pricing scheme applicable to various products and purchasing organizations. The prior art systems have a fixed number, and fixed types, of pricing types. Thus, according to the prior art, the user had to modify his or her pricing system and business methods in order to accommodate the prior art pricing systems. The invention adjusts, in a completely flexible manner, to the user's specific pricing methodology. Not only does the invention permit a user to uniquely specify his or her own various pricing types, but the invention also allows a user to specify the sequence in which the various pricing types are applied in arriving at the final price of the product. This is described in more detail below.

After a user specifies the various Pricing Types in column 712, the invention permits the user to also specify the sequence in which the different Pricing Types are applied in order to arrive at the final offering price of a particular product. Column 718 shows a sample sequence used to

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apply the various Pricing Types. In the sample sequence shown in column 718, the Maximum Discount is the first applicable operation. For example, the Maximum Discount can be 50%. In the sample sequence shown in column 718, the Maximum Discount is followed by the Base Cost. Since Base Cost is an override operation, the Maximum Discount is automatically overridden by the Base Cost. Thus, if the Base Cost is \$80.00, the number 80.00 overrides the number 0.5 (i.e. 50%). Nevertheless, the number corresponding to the Maximum Discount (i.e. 0.5) is stored for informational purposes. For example, the Maximum Discount may be used to override a total discount that exceeds the Maximum Discount. Alternatively, the Maximum Discount may be used as a flag to prevent sale of a product at a discount that exceeds the Maximum Discount. The numerical value assigned to the Maximum Discount pricing type (in this example, 0.5) can be thought of as a denormalized number discussed in relation with FIG. 5. In other words, the significance of this number (in this example, 0.5) is determined during run time. The numerical value assigned to a Maximum Discount pricing type is not used in an addition, subtraction, or multiplication operation. However, the numerical value of the Maximum Discount is used in a comparison operation to ensure that the net result of all discounts applied to a particular product does not exceed a certain limit (i.e. the limit set by the Maximum Discount pricing type).

As shown in the sample sequence of column 718, a Tax operation is applied after many operations are applied to arrive at the final offering price. As shown in columns 712 and 716, a Tax Pricing Type is a percentage Operation. As shown in column 718, a percentage increase due to a Tax operation will be applied near the end of the pricing sequence. In other words, taxes are applied after almost all other operations. In the sample sequence shown in column 718, the only two operations that are applied after the Tax operation are the Shipping Charges and the Freight Charges by Weight operation. The reason is that shipping charges and freight charges are not taxed. Thus, the final offering price of the product is determined by applying tax charges just prior to applying shipping and freight charges.

As another example, FIG. 8 shows an alternative sequence (shown in column 818) in which the various Pricing Types in column 712 may get applied. As shown in column 818 the alternative sequence is a simpler sequence and involves the List Price, Currency Conversion Percentage, Currency Conversion Factor, Customer Negotiated Discount, and Customer Negotiated Price. According to this sequence, the List Price override operation is the first step in designating an offering price for the product. Then currency conversion operations are performed, and finally negotiated discount and negotiated price operations are performed.

The invention permits a user to arrange a customized sequence to apply to the Pricing Types (also specified by the user) in order to arrive at the final offering price. For example, a sequence can include only the Base Cost, List Price, and Tax. Thus, the price of the product is determined first by the Base Cost override operation, then by the List Price override operation, and then by applying taxes. Although the List Price override operation overrides all prior price determinations for a given product, the Base Cost is still useful for informational purposes. Also, if the List Price is removed from the sequence, the Base Cost still remains as an operation which begins the sequence based on the basic cost of a given product. Manifestly, any other pricing sequence can be designated by the user and applied to the user selected Pricing Types.

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The invention provides a further feature in determining the final price of a product by providing a "Target" operation shown in column 722 of FIG. 7. By way of an illustrative example, suppose that a product's initial sales price is equal to its base cost of \$100, and that according to the user specified pricing sequence two 10% discounts must be applied to arrive at the final offering price. Ordinarily, the first 10% discount results in a price of \$90 (i.e. \$100-\$10=\$90) and the second 10% discount results in a price of \$81 (i.e. \$90-\$9=\$81). The invention permits the target price to remain the initial sales price, i.e. the base cost of \$100 in the example. Thus, if the user specifies that the target price is the Base Cost, both of the 10% discounts are applied to the base cost of \$100. In other words, the first discount results in a price of \$90 (i.e. \$100-\$10=\$90) and the second 10% discount results in a price of \$80 (i.e. \$90-\$10=\$80). The provision of the Target operation permits the user to have further flexibility in determining the final offering price of a product. For example, even if the final offering price of a product reflects a deep discount to a certain purchasing organization, the user (here, the selling organization) can specify that maintenance fees should be calculated off of the list price or the base cost, instead of the deeply discounted offering price. The user can also specify the target price to be the minimum or maximum value of another pricing type. In the above example, the maintenance fees can be calculated based on the minimum or maximum value of a particular pricing type, such as the "Cost of Customer Specific Pricing."

As discussed above in relation to FIG. 5, the invention simplifies the prior art tables by associating a value in "How Much" column 44 with an entire purchasing category in "Who" column 42 and an entire product category in "What" column 46. FIG. 9 is an example of a computer screen according to the invention which corresponds to the table of FIG. 5. As shown in FIG. 9, the user selects a specific customer (for example, Trilogy Development Group) in box 912. Then the user selects a Pricing Type, such as a List Price as shown in box 914. The invention automatically displays the operation associated with the Pricing Type in box 916. In the present example, the operation (associated with a List Price) is a Price Override which is shown in box 916. In box 924 the user selects Product A as the specific product offered for sale to the customer (here Trilogy Development Group). In box 918 the user specifies that the List Price for Product A offered to Trilogy Development Group is \$100. In box 920 the user indicates that the effective date for this List Price is Mar. 15, 1996. In box 922 the user indicates that the termination date for the List Price is Dec. 31, 1999. In box 926 the user specifies the required quantity of Product A offered to Trilogy Development Group at the List Price of \$100. In the present example, the user has set the quantity to be between 100 and 1000 units (boxes 928 and 930). In other words, the List Price for quantities below 100 and above 1000 units would be different than \$100.

As discussed above, the invention permits the user to specify the organizational groups to which the specified customer (here the Trilogy Development Group) belongs. The invention also permits the user to specify the product groups to which the specified product (here Product A) belongs. FIG. 10 shows the "Product Details" corresponding to Product A (folder tab 1018 indicates that this is a Product Details screen). Box 1014 shows that the product specified by the user is Product A. The user specifies that the product group to which Product A belongs is Storage Devices group. This is accomplished by selecting Storage Devices group 1025 from the Product Groups window 1030, and then

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"dragging" the Storage Devices product group and "dropping" it in box 1024. Box 1024 is used to display the product group which the user has identified as the group containing a particular product. In this example, Product A is shown to belong to the Storage Devices product group.

FIG. 11 is an example of how a user can specify the organizational group for a specified customer. Folder tab 1108 ("Customer Detail") indicates that this computer screen permits the user to specify customer details. Box 1102 shows the specified customer to be Trilogy Development Group. The user then specifies the organizational group to which the customer belongs. This is accomplished by "dragging" the desired organizational group from the organizational groups window 1110 and "dropping" the group in box 1104. In the present example, the user has specified that "Dealers" is the organizational group to which the specified customer belongs. As such, boxes 1102 and 1104 show that Trilogy Development Group is a Dealer.

FIG. 12 shows some of the price adjustment parameters specified for the "Dealers" organizational group and the "Storage Devices" product group. Folder tab 1208 ("Adjustment Detail") indicates that the computer screen shown in FIG. 12 permits a user to specify various price adjustments. As discussed in relation to FIG. 5, the price adjustment parameters relate an entire category of products (shown in the "What" column of FIG. 5) to an entire category of organizational groups (shown in the "Who" column of FIG. 5). FIG. 5 also showed the various price adjustments in the "How Much" column. In the example shown in FIG. 12, the organizational category of Dealers is the "Who" in FIG. 5 and the product category of Storage Devices is the "What" in FIG. 5. The organizational group category of Dealers is shown in box 1202 and the product category of Storage Devices is shown in box 1212. In the example shown in FIG. 12, the price adjustment (i.e. the "How Much" in FIG. 5) is a Program Discount for all organizations belonging to Dealers purchasing any product belonging to Storage Devices. The Program Discount is a Pricing Type and is shown in box 1204. As shown in box 1206, the Program Discount is a percentage decrease Pricing Type. Moreover, in boxes 1207 and 1209 the effective date and the termination date for the Program Discount are specified as Mar. 15, 1996 and Dec. 31, 1999, respectively. Also, boxes 1214, 1216, and 1218 show that the dollar amount for the Program Discount must be in the range of \$1,000 to \$100,000. The amount of the percentage decrease is shown in box 1210 as 0.1. In other words, any product belonging to the Storage Device group is sold to a customer belonging to the Dealers group at a 10% discount, on the condition that the product is purchased between Mar. 15, 1996 and Dec. 31, 1999, and that the customer buys between \$1,000 and \$100,000 worth of the product.

Thus, although the List Price for Product A sold to Trilogy Development Group was specified to be \$100, the Program Discount of 10% automatically applies to the purchase of Product A by Trilogy Development Group. The reason is that the invention recognizes that Trilogy is a dealer and that all dealers get a 10% discount when purchasing a storage device and that Product A is a storage device. The 10% discount applies if the purchase is made between Mar. 15, 1996 and Dec. 31, 1999, and if the amount purchased is between \$100 and \$100,000 worth of Product A. As discussed above, the feature of the present invention that relates an entire category of products with an entire category of organizational groups presents a significant advantage over the prior art due to simplification of the prior art's price tables and price adjustment tables.

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As another example of the invention's simplification of the prior art's price and price adjustment tables, reference is made to the computer screen shown in FIG. 13. As shown in FIG. 13, the invention permits the user to select a tax rate for purchasing organizations located in various geographic locations. The invention permits a user to generate a desired geographic group in window 1302. In the example of FIG. 13, the user has specified one geographic group to be "California." The user then places the geographic designation "California" in box 1304 by "dragging" the group "California" and "dropping" it in box 1304. The Pricing Type that the user would select for specifying a tax rate is "Tax." Accordingly, the user would select "Tax" as the Pricing Type as shown in box 1306. The Operation corresponding to a "Tax" Pricing Type is a "Percentage Increase" as shown in box 1308. The user then specifies the "Amount" of the percentage increase to be "0.0825" (This is interpreted as an 8.25% tax rate by the present invention). The user then selects the product group to which this tax rate would apply. This is accomplished by "dragging" and "dropping" the product group "All Products" from window 1310 into box 1312. It is noted that an equal tax rate is usually applicable to all products. Thus, the appropriate product group to select is usually the "All Products" group. Furthermore, the tax rate is typically independent of the quantity or dollar volume of a purchase. The user specifies this by checking boxes 1314 and 1316 indicating that no conditional ranges apply. In other words, there are no applicable lower and upper quantity (or dollar volume) limits.

As stated above, the same tax rate usually applies equally to products in the group "All Products." However, there can be exceptions. FIG. 14 illustrates how the invention permits a user to effectively make exceptions to the general rule that the tax rate applies equally to every group in the "All Products" category. For example, a user may desire that services, such as consulting and support services, not be taxed. Consulting and support services may be categorized under the "Support" group shown in window 1410 of FIG. 14. The user "drags" and "drops" the Support group into box 1412. The user then specifies that the applicable tax rate for the "Support" group is 0%. This is shown as 0.00 in box 1408. The remaining information shown in FIG. 14 is the same as that shown in FIG. 13. Thus, every product group with the exception of the "Support" group in window 1410 is taxed at 8.25%. The reason is that the "Support" group tax rate overrides the tax rate designated at a higher level in the hierarchy. Thus, while every group (with the exception of the "Support" group) is taxed at the rate designated for the root group "All Products," the "Support" group is taxed at a different rate. This feature of the invention permits a user to carve out exceptions to situations typically calling for an equal treatment of some product and organizational groups.

FIGS. 15A through 15C illustrate the execution flow of the present invention. The execution flow of the invention begins in step 1502. In step 1504 the user specifies a pricing sequence to operate on the various Pricing Types. For example, the user may specify a pricing sequence such as that shown in FIG. 8. This means that the List Price, Currency Conversion Percentage, Currency Conversion Factor, Customer Negotiated Discount, and Customer Negotiated Price are applied in the indicated sequence. Namely, the List Price is applied first and the Customer Negotiated Price is applied last. As stated above, a Tax Pricing Type is also typically applied. A Tax Pricing Type is typically near the end of a pricing sequence. In step 1506 the user specifies effective dates during which various price adjustments are applicable. In step 1506 the user specifies products, price

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adjustments or other user selected parameters. In step 1508 the user specifies the specific purchasing organization for the specific product. In step 1510, the present invention identifies all organizational groups that are higher than the user specified purchasing organization in the organizational hierarchy.

In step 1512 the present invention performs a database query for retrieving all product records related to user specified products. The database query is directed to user specified products, the user specified purchasing organization, the identified organizational groups, and the effective dates specified by the user. In step 1514 the invention identifies all product groups that are higher than user specified products in the product group hierarchy. In step 1516 the invention performs a database query for retrieving all pricing adjustments applicable to user specified products and the user specified organization. The query is also directed to retrieving all pricing adjustments applicable to identified products and organizational groups, and to the user specified effective dates. Each pricing adjustment consists of the application of those Pricing Types that apply to user specified products (and in the user specified pricing sequence).

In step 1518 the invention sorts the retrieved list of applicable pricing adjustments according to their respective specificities. First, the list of the pricing adjustments is sorted according to the sequence of the Pricing Types associated with each pricing adjustment. Second, the list of the pricing adjustments is sorted according to the product hierarchy. Pricing adjustments specified at a lower level of the product hierarchy are assumed to be more specific and are thus placed after the pricing adjustments specified at a higher level of the product hierarchy. Third, the list of pricing adjustments is sorted according to the organizational hierarchy. Pricing adjustments specified at a lower level of the organizational hierarchy are assumed to be more specific and are thus placed after the pricing adjustments specified at a higher level of the organizational hierarchy. Fourth, pricing adjustments with quantity range checks are placed after pricing adjustments with amount and volume range checks. Fifth, pricing adjustments with a higher low range criteria are placed after those with a lower low range criteria and pricing adjustments with a higher high range criteria are placed after those with a lower high range criteria.

In step 1520 the less restrictive pricing adjustments with the same Pricing Types are eliminated. In step 1522 the price of the user specified product is set to zero so that the price can be determined by application of the sorted pricing adjustments. In step 1524 the various Pricing Types included in the sorted pricing adjustments are applied in the user specified pricing sequence. Thus, the price of the user specified product is increased, decreased, and/or overridden until the final price is determined. In step 1526 the invention's execution flow ends.

Thus, a method and apparatus for pricing products in multi-level product and organizational groups is described.

What is claimed:

1. A method for determining a price of a product offered to a purchasing organization comprising:

identifying one or more organizational groups, Within a hierarchy of organizational groups, of which the purchasing organization is a member, wherein pricing information is (i) stored in a data source and (II) associated with one or more of the organizational groups;

retrieving from the data source the pricing information applicable to the one or more identified organizational groups;

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arranging a hierarchy of organizational groups comprising a plurality of branches such that an organizational group below a higher organizational group in each of the branches is a subset of the higher organizational group; 5

arranging a hierarchy of product groups comprising a plurality of branches such that a product group below a higher product group in each of the branches is a subset of the higher product group;

storing pricing information in a data source, wherein the pricing information is associated, with (i) a pricing type, (ii) the organizational groups, and (iii) the product groups;

retrieving applicable pricing information corresponding to the product, the purchasing organization, each product group above the product group in each branch of the hierarchy of product groups in which the product is a member, and each organizational group above the purchasing organization in each branch of the hierarchy of organizational groups in which the purchasing organization is a member; 15

sorting the pricing information according to the pricing types, the product, the purchasing organization, the hierarchy of product groups, and the hierarchy of organizational groups; 20

eliminating any of the pricing information that is less restrictive; and determining the product price using the sorted pricing information.

18. The method of claim 17 wherein the product is located in at least two branches of the hierarchy of product groups. 30

19. The method of claim 18 wherein the purchasing organization is located in at least two of the branches of the hierarchy of organizational groups.

20. The method of claim 18 wherein the pricing information applicable to the product and each product group above the product in each branch of the hierarchy of product groups in which the product is located are retrieved utilizing a query to a data source in which the pricing information is stored. 35

21. The method of claim 17 wherein the purchasing organization is located in at least two of the branches of the hierarchy of organizational groups. 40

22. The method of claim 21 wherein the pricing information applicable to the purchasing group and each organizational group above the purchasing group in each branch of the hierarchy of organizational groups in which the purchasing group is located are retrieved utilizing a query to a data source in which the pricing information is stored. 45

23. The method of claim 17 wherein the pricing information is applied according to an applicable price adjustment sequence. 50

24. The method of claim 17 wherein the pricing information comprises denormalized pricing adjustments.

25. The method of claim 17 wherein the pricing information applicable to the product and each product group above the product in each branch of the hierarchy of product groups in which the product is located are retrieved utilizing a query to a data source in which the pricing information is stored. 55

26. A computer readable storage media comprising: computer instructions to implement the method of claim 17. 60

27. A computer implemented method for determining a price of a product offered to a purchasing organization comprising:

retrieving from a data source pricing information that is (i) applicable to the purchasing organization and (ii)

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from one or more identified organizational groups, within a hierarchy of organizational groups, of which the purchasing organization is a member;

retrieving from the data source pricing information that is (i) applicable to the product and (ii) from one or more identified product groups, within a hierarchy of product groups, of which the product is a member; and

receiving the price of the product determined using pricing information applicable to the one or more identified organizational groups and the one or more identified product groups according to the hierarchy of product groups and the hierarchy of organizational groups.

28. A computer readable storage media comprising: computer instructions to implement the method of claim 27.

29. An apparatus for determining a price of a product offered to a purchasing organization comprising:

a processor;

a memory coupled to the processor, wherein the memory includes

computer program instructions capable of:

retrieving from a data source pricing information that is (i) applicable to the purchasing organization and (ii) from one or more identified organizational groups, within a hierarchy of organizational groups, of which the purchasing organization is a member;

retrieving from the data source pricing information that is (i) applicable to the product and (ii) from one or more identified product groups, within a hierarchy of product groups, of which the product is a member; and

receiving the price of the product determined using pricing information applicable to the one or more identified organizational groups and the one or more identified product groups according to the hierarchy of product groups and the hierarchy of organizational groups.

30. An apparatus for determining a price of a product offered to a purchasing organization comprising:

means for retrieving from a data source pricing information that is (i) applicable to the purchasing organization and (ii) from one or more identified organizational groups, within a hierarchy of organizational groups, of which the purchasing organization is a member;

means for retrieving from the data source pricing information that is (i) applicable to the product and (ii) from one or more identified product groups, within a hierarchy of product groups, of which the product is a member; and

means for receiving the price of the product determined using pricing information applicable to the one or more identified organizational groups and the one or more identified product groups according to the hierarchy of product groups and the hierarchy of organizational groups.

31. An apparatus for determining a price of a product offered to a purchasing organization comprising:

means for arranging a hierarchy of organizational groups comprising a plurality of branches such that an organizational group below a higher organizational group in each of the branches is a subset of the higher organizational group;

means for arranging a hierarchy of product groups comprising a plurality of branches such that a product group below a higher product group in each of the branches is a subset of the higher product group;

means for storing pricing information in a data source, wherein the pricing information is associated with (i) a

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pricing type, (ii) the organizational groups, and (iii) the product groups;
means for retrieving applicable pricing information corresponding to the product, the purchasing organization, each product group above the product group in each branch of the hierarchy of product groups in which the product is a member, and each organizational group above the purchasing organization in each branch of the hierarchy of organizational groups in which the purchasing organization is a member;

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means for sorting the pricing information according to the pricing types, the product, the purchasing organization, the hierarchy of product groups, and the hierarchy of organizational groups;

means for eliminating any of the pricing information that is less restrictive; and

means for determining the product price using the sorted pricing information.

* * * *

CERTIFICATE OF SERVICE

I hereby certify that the foregoing BRIEF OF APPELLANT VERSATA DEVELOPMENT GROUP, INC. was served on this 17th day of March, 2014 by operation of the Court's CM/ECF system per FED. R. APP. P. 25 on the following counsel:

Erika H. Arner
J. Michael Jakes
Michael A. Morin
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.
901 New York Avenue, N.W.
Washington, D.C. 20001-4413
erika.arner@finnegan.com

Attorneys for Appellees
SAP America, Inc. and SAP AG

Nathan K. Kelley, Solicitor
William LaMarca, Associate Solicitor
Joseph Matal, Associate Solicitor
Scott C. Weidenfuller, Associate Solicitor
Solicitor's Office, U.S. Patent and Trademark Office
Mail Stop 8, P.O. Box 1450
Alexandria, VA 22313

Attorneys for Intervenor
Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office

Date: March 17, 2014

/s/ Joel L. Thollander

CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing BRIEF OF APPELLANT VERSATA DEVELOPMENT GROUP, INC.:

1. complies with the type-volume limitation of FED. R. APP. P. 32(a)(7)(B). This brief contains 13,978 words, excluding the parts of the brief exempted by FED. R. APP. P. 32(a)(7)(B)(iii) and FED. CIR. R. 32(b). Microsoft Word 2010 was used to calculate the word count.
2. complies with the typeface requirements of FED. R. APP. P. 32(a)(5) and the type style requirements of FED. R. APP. P. 32(a)(6). This brief has been prepared in a proportionally-spaced typeface using Microsoft Word 2010 in 14-point Times New Roman type style.

Date: March 17, 2014

/s/ Joel L. Thollander